Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

Vol. XIII, No. 12 | OCTOBER, 1937 | $2.00 a Year

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Published by

Practical Publications, Inc., 222 East Ohio St., Indianapolis, Indiana

Eastern Office: C. A. Larson, Mgr., 254 West 31st Street, New York City; Phone, Penna. 6-9049

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Used immediately after sanding and rubbing with rubbing compound, it produces a brilliant, lasting polish, entirely free from the usual greasy, oily look and showing no dull spots nor finger prints where handled.

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THE GILBERT SPRUANCE COMPANY

Specialists in the manufacture of wood and metal finishing products since 1907.

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Black Enamels and Japans

Color fashions come and go — in manufacturers' products as well as ladies' dresses — but year after year there is a steady demand for Black Enamels and Japans.

Hilo Blacks are a better buy than ever today, for the Hilo "Better the Finish" Laboratory has constantly improved the old standbys and created new ones to meet new demands. No matter what your requirement, there is a Hilo Black that will fit it perfectly.

Mail the coupon for the descriptive bulletin "Black Enamels and Japans" and a sample of the Hilo Black that will fill your needs.

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Air Dry	Rubber	for Spraying
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Letters from Readers

OF INDUSTRIAL FINISHING

Editor's Note—These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters sent to them in care of this office will be forwarded at once.

Graining Rolls

Kindly give us a list of names from whom we may purchase graining rolls. Our graining rolls need replacing, and we believe the last we bought were from the —— Co. Kindly advise if there are any other firms manufacturing the same thing. —L. P. Co. (Furn.; Caskets).

Masking Tape

Please put us in touch with manufacturers of masking tape.—D. V. Co. (Novelties).

Refer to advertisement in September issue, page 60.—Ed.

Porcelain Enamel Repair

In the September issue, on page 11, "L. K. H." asks for information on porcelain enamel repair. We are interested in this matter also and would like to know just what is recommended for this purpose.—M. H. Co. (Metal Vaults).

Metal Cleaning; Bonderizing

I would like to have as much information as possible on the cleaning of metal for refrigerators, and the best solutions to use. Also, as much information as I can get on the bonderizing of the metal for one coat of primer and one coat of synthetic baked enamel.—R. V. S.

Refer to advertisements in September issue, pages 10 and 33.—Ed.

Rustproofing Company

How about letting us have the address of the Oxoseal Co., mentioned in your August issue? Or, if you care to, have them drop us a line regarding their product. We are quite interested.—P. L. Co. (Enameling and Plating).

It is 814 E. Hastings St., Vancouver, B. C., Canada.—Ed.

Heat-Resistant Handle

I understand there is a product on the market for finishing handles, and it is not affected by heat. I am interested in securing a sample of this product, and any information you can give me will be greatly appreciated.—W. S. L.

Aluminum Paint

We are giving much attention to the problem of finding a suitable air-dry aluminum paint or an aluminum that will remain in suspension in a dipping tank. We are using the material for finishing bed springs.

A FEW SUGGESTIONS

RUB-LESS LACQUERS are *really* go'ng to town! Almost without exception, every trial order has resulted in quantity purchasing. The idea is that they flow out more smoothly, require *less* rubbing—consequently more lacquer remains on the surface and a marked saving is shown in rubbing costs. Order enough for a *real* test and if it is not all we claim, return unused portion at our expense.

WATEROIL STAINS are by no means just another brand of non-grain-raising stains. They are *definitely* different—they do not change with age, precipitate, fade or bleed.

No. 1900 CLEAN-UP POLISH elim'nates haze or bluish bloom. Miscible in water leaves finish clean and dry.

Write us about our newest finishes—Amber Mahogany—Moderne Walnut, and a long list of others such as Georgian and Antique Bleached Mahogany—Olive, Belgium and Patina Walnut—NuDark and Autumn Maple, English Oak, etc.

P. S.—Don't forget DU-BAR BLEACH.

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"UNQUESTIONABLE QUALITY" WOOD FINISHING SUPPLIES

1830-32 NORTH LARAMIE AVENUE CHICAGO, ILLINOIS

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Economical and Convenient to Use

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Solox dissolves all spirit soluble gums for Shellacs, Shellac Substitutes and for Spirit Varnishes

U. S. INDUSTRIAL ALCOHOL CO.

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Branches and Warehouses in All Principal Cities

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NEW YORK, N. Y.
World's Largest Producer of Alcohol Solvents

We would appreciate advice from you as to recent developments along these lines and possible sources of information. — R. Y. S. Co. (Bed Springs).

Paint Like Chromium

We understand that there is now on the market a new paint which resembles chromium. If you know the makers of any such product, we shall be glad to have you advise us. —A. E. R. Co. (Builders of Amusement Park Equipment).

Paint Measuring Meter

Will you kindly furnish us with the name and address of the concern manufacturing the paint-measuring meter, as described on page 48 of the August issue?—R. G. Engineering Co.

Kindly inform us the name of the manufacturer of the paint-measuring meter described on page 48 of August issue.—H. R. Co. (Refrigerators).

In the August issue of INDUSTRIAL FINISHING you have an article describing paint-measuring meters. This is of interest to us. We request that you send us the name of the manufacturer, or forward our inquiry to him, in order that we might get further information regarding this product.—W. Chair & Furn. Co.

We would be extremely grateful to you if you would let us have full technical data and prices for the paint measuring meters described on page 48 of August issue, and the "Bathytrol" paint film measure shown on page 62 of August issue. —L. Paint Products Co.

This is a product of the Buffalo Meter Co., 2917 Main St., Buffalo, N. Y.—Ed.

Export Manufacturers

We should like for you to put us in touch with the names of manufacturers of cellulose and synthetic lacquers, enamels, varnishes and paints for brushing and spraying purposes. It may interest you to know that already we have been importing from an American firm, but as they have not given us satisfaction, they have forced us to look for new manufacturers . . . .

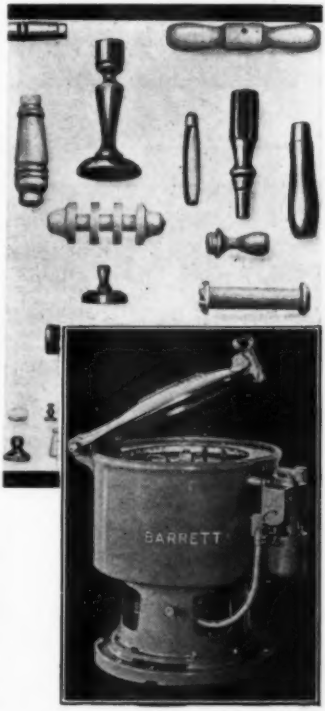
The manufacturer should supply

Coating small parts

USE THE
FILWHIRL
CENTRIFUGAL
ENAMELER

Big savings can be made in finishing such items as small wood turnings, nuts, bolts, coil springs, hair pins, wood and metal toys, etc., by using the Barrett Centrifugal Coating Machine. It's faster, does a better job of finishing and saves materials. Already, a score of successful installations. Let us prove it! Send us samples of your products; we will finish them and return for your inspection. Do it TODAY!

THE LEON J. BARRETT CO.
Grafton Street, Worcester, Mass.



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Walker Furniture Finishes are guaranteed for uniformity and excellence of quality. All raw materials are carefully tested and checked to insure the highest standard at all times.

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ALCOHOL AND HEAT RESISTING CLEAR LACQUER	No. 1719. Maximum resistance to alcohol, hot dishes, and boiling water.
CLEAR WOOD LACQUER No. 57	Noted for its excellent value in the low priced field; a tough and durable lacquer.
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H.V. WALKER CO.

Makers of Fine Finishes

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makers of novelty items in wood, paper, metal and fabric are beautifying the finish of their products with a spray finish of

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or

RAYON FLOCKS

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CLAREMONT, N. H.

The country's leading makers

Paasche

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Type BURF High Production Airbrush is establishing new records for performance, material savings and uniform coverage. The positive indexed control of pattern—multiple fan ports—balanced grip—damage-proof construction—convertibility for all coating purposes and for use with all coating materials—make it the most talked of airfinishing tool in America today. Send for free bulletin C1-37.

A demonstration can be arranged in your plant without any obligation on your part — simply tell us the time most convenient for you.

Paasche Airbrush Co.

1917 DIVERSEY PARKWAY CHICAGO, ILLINOIS

QUICK-DRYING ENAMELS

require dependable cleaning!

THERE can't be any halfway cleanliness about surfaces to be finished with a quick-drying enamel. They MUST be THOROUGHLY clean.

For, if any oil or grease is not removed, you can easily see what happens. Slow drying oil and grease films COMBINE with and SLOW DOWN the fast drying qualities of the enamel.

Gives Better Results

There's real danger too, that the bond between the enamel coat and surface will be non-uniform . . . weak. Get the full value and quality results your enamels can give you by preparing the way for them with quick, energetic Oakite metal cleaning materials.

Write and get the important details you will need to know about. No obligation.

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32F Thames St., NEW YORK, N. Y.

Branch Offices and Representatives in All Principal Cities of the U. S.

OAKITE
SPECIALIZED INDUSTRIAL CLEANING MATERIALS & METHODS

free shade cards and literature for helping of sales in India.

For business reference, please refer to the Bank of Montreal, New York Mercantile Bank of India Ltd., London and Bombay.

We hope the above mentioned particulars will help in finding out suitable exporters for our requirements. —I. S. W. Co., INDIA.

Paint Film Measurement

We are interested in the "Bathytrol" described in August issue, page 62, and will appreciate any additional information you have to offer, together with prices.—E. N. Refrigerator Co.

Will you please furnish us the address of the manufacturer of the "Bathytrol" described on page 62 of August 1937 issue?—H. A. N. Co. (Button Mfr.).

We would greatly appreciate your advice as to how we may get in touch with the Electronic Control Corp. in regard to the "Bathytrol" shown on page 62 of August issue.—R. Mfg. Co. (Industrial Steel Products).

This instrument is a product of the Electronic Control Corp., 2832 E. Grand River Blvd., Detroit, Mich.—Ed.

Striping Tools

Will you be kind enough to give us the names of all of the manufacturers of striping tools that you have on file?—H. C. Co. (Venetian Blinds, Window Screens).

Stencils to Imitate Veneers

In further reference to our recent letter and your reply to same, regarding stencils for imitating veneer, we have contacted the companies mentioned in your letter and found that none of them make the type of stencils that we have in mind.

Then we secured from the Thomas Register, the names of all manufacturers making metal stencils, and have written to them but had no better success.

What we want is the names of some concerns that have been making metal stencils for imitating veneers for the past two years. We believe there may have been an article in your magazine some time in

"I BELIEVE IN STILLE-YOUNG"

says a customer

"because their products run the same . . . week after week . . . month after month. ***You know what you're getting.***"

Stille-Young Lacquers, Stains, Sealers, Fillers, Enamels, Varnishes, are manufactured at Chicago, Illinois, and High Point, North Carolina, by

THE STILLE-YOUNG CORPORATION

and an inquiry from you will bring action at once.

the past regarding the making of these stencils, mentioning the name of the party that made them, or there may have been a letter from one of your readers in regard to this subject.—D. Furn. Co.

Can some reader suggest what kind of stencils or whose make of stencils this inquirer has in mind? —Ed.

Sandblasting Machine

I have had an inquiry for a sandblasting machine for removing paint from a car or truck. I am at a loss to know who makes such a machine. If you can furnish me with the names of the manufacturers of this equipment, I will be most appreciative.—R. W. M. (with Finish Mfr.).

Names and addresses of manufacturers have been furnished.—Ed.

Old Bronze Finish

We are sending you a cast bronze sash lock which appears to have an etched finish, and we are desirous of duplicating this finish. Will you kindly advise us of the proper procedure to duplicate this finish and, if possible, could you tell us just what the finish is called?

We have already exhausted the possibilities of this finish being applied with lacquer. Our experiments prove quite conclusively that this finish is obtained by applying some sort of a resist and then etched in acid, but we do not know just what type of resist should be used.—A. A. Co. (Builders' Hardware).

EDITOR'S NOTE: The finish looks like what you would get if you dug up an aged and corroded bronze sash lock and cleaned it; then let it stand until it became half dull again. The high places are semi-polished gold-bronze, while the low places are dull and partly black bronze.

Barrel Plating

Can you tell me if there is a barrel plating outfit to use for brass plating in a small way? Please let me have the benefit of your experience along this line.—T. Mfg. Co. (Hardware Specialties).

Fig. 1

Fig. 2

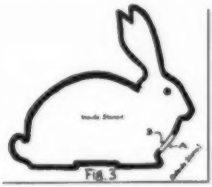


Fig. 3

Applied Art in Decorative

THIS ARTICLE deals with some simple forms of art applied to the finishing of such products as nursery and novelty furniture, cabinets and many other types of decorative products. In mentioning the use of stencils, I have purposely omitted the silk-screen stencil for the simple reason that so many excellent articles dealing with silk-screen stencils have already appeared in these pages.

One-Color Stencils

One of the simplest ways of decorating furniture, cabinets, etc., is by means of the hand-cut stencil. Anyone who can draw a simple outline of an object can cut an art stencil. It is best to use regular stencil paper, but even this is not absolutely necessary. Any very heavy paper or light cardboard may be made into a satisfactory stencil by soaking it in linseed oil, allowing the fibers thoroughly to absorb the oil and then to dry. Unless the paper is oiled, it will leave a ragged edge when cut.

In preparing a simple one-color stencil, the outline of the decoration desired is traced from the original drawing to the stencil, and is then cut out with a small sharp knife or razor blade. The stencil is then properly placed over the object to be decorated, and the finishing material is applied by spraying. The result, of course, will be a one-color silhouette.

Even a simple one-color stencil lends itself to a variety of effects however, and one need not be limited to the silhouette. For instance, the nozzle of the spray gun may be adjusted to give a smaller spray volume and, unless the stencil is a very small one, its outline only may be sprayed, leaving the center of the decoration unfinished so that the ground coat shows through. The decoration would then be highlighted—see Fig. 1. For delicate work in highlighting small decorations, it is necessary to use an artist's airbrush instead of the ordinary spray gun. These airbrushes may be attached to the standard compressed-air system and, where much decorating of a fine nature is done, it will pay to invest in one.

Some so-called one-color stencils may be used to produce a

Fig. 1 — Sprayed through one cut-out stencil.

Fig. 2 — By shielding one object, a single stencil can be used to produce a 2-color job.

Fig. 3 — Here two stencils are used, one outside and one inside.

Finishing

by Albert F. Byers
Benjamin Franklin Paint & Varnish Co.

Fig. 4 (right) — Realistic cloudy sky effects can be secured by shielding the spray with a torn blotter.

decoration in two colors, as shown in Fig. 2. In this case the shield part of the stencil is masked over while the lion is being sprayed, and vice versa.

If it is desired to have a decoration with the inside solid and in one color and a clear-cut "heavy pencil" outline in another color, as illustrated in Fig. 3, it will be necessary to cut out the stencil along both lines *A* and *B*. This will produce two stencils, one with the decoration cut out, and the other, which is, of course, the cut-out itself. The spraying procedure is simple. Spray the first stencil, making a solid silhouette; then, when this is dry, place the inside cut-out stencil in its proper place *without* removing the outside stencil, and spray again, this time in the contrasting or harmonizing border color.

While spraying in the border, it will be necessary to hold with the fingers, or otherwise secure, the inside stencil.

Multi-Color Stencils

Where more than one color is desired and the colors are not kept distinctly separate as in Fig. 1, but where one color overlays another, it is necessary to prepare a separate stencil for each color, and these stencils must register, that is, they must be so placed over the article being decorated that the colors will fall in their proper places. This may readily be accomplished if all the stencils (one for each color in the decoration) be made exactly the same size, or at least pasted to the same size frame or mat in each case, and if each drawing (before cutting out) be centered

on each stencil in exactly the same way. A drawing, of course, is made to outline each color desired, and then cut out of the stencil paper.

Airbrush Effects

Many interesting effects can be achieved by means of the artist's airbrush. Among these are cloud effects (see Fig. 4), modernistic shaded backgrounds, delicate highlighting, and interesting blending of tones.

Cloud effects may be secured by the use of a blotter torn at random so that the edges are ragged and uneven. An uncoated blotter is best, as it leaves fuzzier (softer) edges. If the clouds desired are to present a striking effect and stand out sharply, then the torn blotter can be laid directly against the surface of the article being sprayed. If, however, a softer, more diffused effect is desired, it is advisable to hold the blotter a short distance away from the surface when spraying. In either case, the blotter is moved from time to time during the spraying, so as to insure a varied and more natural effect.

Other interesting effects may be produced by using straight and circular objects as masks. The straight line and the circle, either separately or in conjunction, can be so handled as to make striking modernistic effects. Often a circular tin lid—a paint can lid, for example—can be used as a satisfactory mask for airbrush work when circular designs are required.

Sandblast Decorations

In closing, it might be interesting to mention a form of art that is little known, and which is both unique and attractive. I refer to decorations in wood made by "sandblasting" away the enameled or lacquered surface of that part of the decoration not protected by the stencil (see Fig. 5). The stencil in this case should be made of metal. Although the term "sandblasting" is used, I do not recommend the use of sand for cutting or etching purposes, but rather

Fig. 5—The clouds and sky effect are secured, in this case, by sandblasting the enameled wooden panel while shielding the foreground with a metal stencil.

the harder and sharper abrasive grain made of silicon carbide or crystalized oxide of aluminum.

Of course, the application of this form of decoration is necessarily limited, since it requires sandblasting equipment, and is most effective on wooden products. Within its restricted field, however, it produces most pleasing results, as the decoration appears to be embossed, and the blasted background shows beautiful wood grain. Sometimes, this natural grain may be used to produce attractive and unusual cloud effects, as shown in Fig. 5.

Radio Cabinet Design

WHAT DOES the public want in radio console styles? Perhaps the answer to this pertinent question is revealed by the accompanying illustration of Sparton Radio model No. 1068 of the 1938 Sparton line, with Selectronne automatic tuning. It is one of a number of cabinets designed by Onnie Mankki of Designers for Industry, Inc., Cleveland, for the Sparks-Withington Co., Jackson, Mich. Of the various styles, this model in walnut with antique gold escutcheon has proved the most popular.

One of the 1938 model Spartan radios.

The reception accorded the first run was such that it was necessary to increase the number tenfold on the second run. Naturally the question arises as to why this particular model is outselling others. The answer may lie in the fact that the cabinet embodies a masculine air of simple sturdiness, and this with the absence of fluting and other decorations, which makes it easy to keep dust-free, may be the qualities that appeal to both men and women.

There is refined individuality in the restrained lines which, with the walnut tone, give the cabinet desired prominence yet obviates any tendency towards conspicuity or room dominance—a factor that appeals to many women. Another factor is the modest size of the cabinet which is 42-in. high, 25-in. wide and 14-in. deep, a cabinet size that is generally popular. This analysis is much in keeping with the experience of most high-grade retail radio outlets who find the public is no longer interested in bulky cabinets, radical style innovations or gingerbread.

Spray Painting Book

A 24-page book (8½x11-in.) just released by the Saylor-Beall Mfg. Co., Detroit, Mich., describes and illustrates a complete line of spray painting and finishing equipment—spray guns, nozzles, filters, regulators, gauges, valves, fittings, fans, booths, respirators, pressure tanks, portable and stationary compressor outfits and portable spray outfits. The book is interesting, attractive and informative.

Troubles and Problems

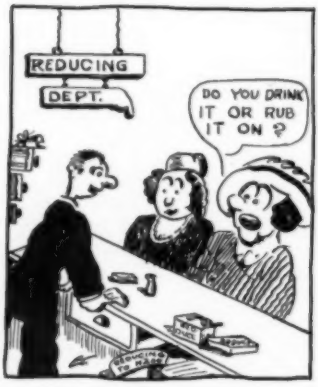
WITH CERTAIN FINISHING MATERIALS

by George A. Endom

Reviewing several of the familiar troubles encountered with primers, lacquers, and synthetics due to such causes as improper selection and use of these materials, or to the improper selection and use of thinners, reducers and retarders; also shop and climatic conditions, characteristic of the surfaces on which finishing materials are used, recoating periods, etc.

IT HAS perhaps been the experience of every foreman finisher to encounter "self-lifting" or "boiling" in the application of final coats of lacquers and enamels—especially so in the last few years when first pyroxylin and then synthetic enamels became widely used because of their greater adaptability to high speed production.

There have been many formulations of coating materials but, as yet, there has not been found any "universal" coating, that is, a coating which is equally suitable for wood, metal, fabric, etc., presenting a fine appearance of finish, while at the same time offering the utmost in preservation or protection from the enemies of durability. For this reason many of the newer finishes have been developed for some special type of work, and the majority are only suitable for that particular purpose or allied lines.



This makes it imperative that the proper materials be selected for each particular line and, following this thought progressively, it is desirable that all of the coating materials be as nearly alike as possible. This is one of the best arguments for using, if possible, all the materials entering

into any type of finish from one general source, preferably from one manufacturer. For example, on any certain type of finish on metals, this would mean using primer, surfacer, reducers or thinners and final coating materials all from one reliable source so that some of the errors in final results would be eliminated entirely. To deviate from this most practical procedure courts trouble and it requires considerable experience, careful experimentation and analysis of each particular problem before any attempt should be made to either cheapen a mixture or operation, or to accelerate drying by using faster undercoats or quicker evaporating reducers.

Switching Reducers Can Spoil a Job

It is assumed that the reader has had enough experience to know that those reducers which are suitable for pyroxylin lacquers could never be used in oil-base enamels, and vice versa; and that some reducers might be used in small quantities (less than 10% by volume) without causing precipitation. If not, then the best method is to follow the advice I give to many amateurs who wish to paint an article at home: "Buy a can of any standard brand of paint and reduce with the thinners recommended on the label or by the dealer."

However, if you have experience that will enable you to solve the many problems that arise in finishing rooms and if you find it advisable or necessary to reduce the cost of your mixtures and operations, study your own peculiar problems; call in your paint service man, and above all, give considerable thought to existing temperatures and humidity. And then, when you finally do select some other materials, watch for signs of trouble.

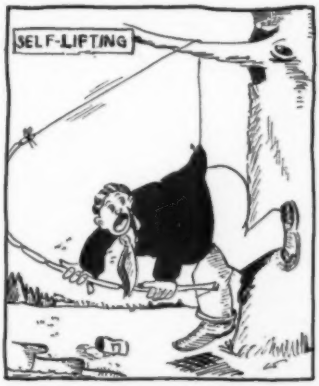
Conditions That May Cause Trouble

If the relative humidity of your finishing room is inclined to be over 60%, or if the drying room temperatures are extremely high; if the moisture from water-sanding is present, or if thinners or reducers are too warm, trouble will surely be encountered.

The first two items will cause pinholing, gas-bubbles, blushing and brittle film in most pyroxylin coatings; bubbles, irregularities and wrinkling in many synthetic enamels.

The two latter items will almost always cause "self-lifting," "boiling" or bridging at joints, crevices and corners in both straight pyroxylin and synthetic coating materials.

Now these troubles are not directly caused by the use of any acceptable thinner or reducer; but thinners and reducers can be a contributing factor in control-



ling their appearance. Therefore it is advisable to maintain a stock of at least two different types of thinners and reducers for both pyroxylins and synthetics.

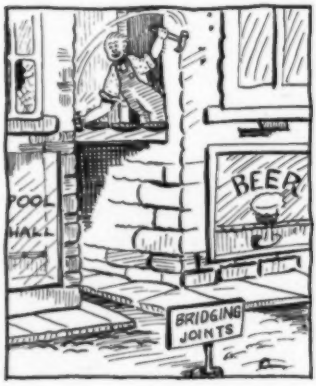
Winter and Summer Conditions

Assuming that the average finishing room does not have adequate air-conditioning control there must be, for practical purposes, two seasons of the year. I divide this roughly in this manner: The winter season, with low humidity and fairly controlled temperature; and the summer season with high humidity and uncontrolled temperature. This could be more scientifically tabulated but is sufficient for purposes of explanation.

In the so-called winter season, pyroxylins may be reduced with thinners of reasonably low-grade and, therefore, low in cost. Of course, there is definitely a limit to low-price reducers if luster, flexibility and flow-out (smoothness of film) are considered.

During the humid weather, which is usually associated with the summer season, it is often found necessary to use slower evaporating reducers which contain high-boiling solvents and are correspondingly higher in cost. These solvents usually solve the problems of blushing (with its accompanying hazard of brittle film) and also, if used with the earlier coats, go far toward eliminating pinholes and gas bubbles.

But these last mentioned thinners are retarders and that means, among other things, a longer time must elapse before recoating or final polishing. Also, the action of the solvents during this slower drying period at times penetrates all top coats and reacts on the primer to the extent of causing the latter to boil or lift—especially if an oil-base or synthetic primer has been used under a pyroxylin lacquer enamel. Consequently, retarders, anti-blush reducers or high-boiling thinners must be used with discretion.



Different Climates Affect Finishes

In most cases, when a manufacturer markets a finishing product, all of the foregoing has been taken into consideration and a properly balanced reducer has been developed for the particular product involved. However, the wide variation of climate and conditions in the United States alone makes it almost impossible to perfect a product that will always be trouble-free under all circumstances and conditions.

It is for this reason that the foreman or finisher in charge of the work should familiarize himself with the action of various thinners in conjunction with the class of work being accomplished,

and in that way proceed to reduce the cost of his finishing mixtures and operations while still maintaining a high quality of finish.

In consecutive order: 1) Where possible, use all of the products of one manufacturer for each type of finish; 2) call on the manufacturer to help solve technical and cost problems, and 3) develop your own satisfactory method of solving finishing difficulties, which will be of inestimable value in eliminating troubles that no one but you can solve because no one can be as familiar as you with the condition surrounding your finishing room.

Switching Reducers Is Sometimes Necessary

There will be times when a manufacturer's reducer can be "too good" for his product—not because of any fault in the coating material or reducer, but because of elements entering which could hardly have been foreseen.

Recently I experienced a problem of this kind. A synthetic lacquer, made by a well known and reputable manufacturer, was applied over base coats of the same brand. Several large pieces were coated and two were completely finished—with wonderful appearing results. It was, however, necessary to let several days elapse before the balance of the parts could be completely finished.

Using the same finish coat mixture that had been successful on the first two pieces, I found, on attempting to recoat, that the complete finish boiled up or showed evidences of "self-lifting." This was not an unknown occurrence in lacquers but I was surprised when the zinc chromate primer acted in the same manner.

I attributed this to the use of too slow evaporation of the reducer; having a faster reducer on hand, I used this to reduce the lacquer from an unbroken package, using some of the first mixture as a partial reducer.

This was successful in recoating top coats, but it continued to lift the primer. There were a great many pieces primed and it would have involved too much work to wash them all off and reprime them. Also the work had to be completed in as short a time as possible.

Recoating Periods

Reasoning that both primer and top coats were the same products I was using daily without trouble, and recalling that some synthetics have definite recoating periods, I resolved to try to eliminate this "lifting" or "boiling" by a method I had found successful under other conditions.

I reasoned that since the primer had been on for several weeks perhaps a thin recoating of primer would solve the problem. I used a mixture of 10% zinc chromate

primer with 90% toluol over the first coat of standard mixture of primer. This solved the problem, allowing the top coats to be applied reduced with anti-blush reducer, provided all finish coats were applied within 48 hours.

Where it was necessary to allow more than two days to elapse between the final top coats, the lacquer had to be reduced with a fast evaporating thinner and the final coat of retarder had to be applied within four hours. This is just another problem that enters into finishing.

Some pyroxylin and many synthetic coatings have definite recoating periods. Some can only be recoated within the 20-minute period, or you must wait at least 12 hours.

Others can be recoated every four hours, or can be recoated after 12 hours, but not between the 12 and 18-hour period.

Some "caseharden" if allowed to remain longer than three days before recoating, in which case it is advisable to mist a coat of solvent over the top coat to give "tooth" to the succeeding coat. The solvent used is determined by the type and manufacture of the finish material, and only that recommended by the finish material manufacturer should be used.

Without delving into chemistry, there are a number of ways to use various grades of thinners, reducers and solvents and to lick the time element in recoating—but remember that using the right kind in the wrong place, or too much or too little, or by disregarding entirely the manufacturer's recommendation about recoating time, especially in the newer finishes, will cause more finishing trouble than can ever be solved.

Bleaching Willow

Willow is fast becoming a popular wood for use in the furniture industry. It makes an acceptable substitute for walnut. With proper finishing it will fit in with any walnut suite. To the untrained eye it would be difficult to tell the difference. However, willow has several shades of color. You will find a lot of black willow, and some with a greenish cast, but it can all be bleached to look alike. There are several commercial bleaching materials on the market—all having merit I presume—but since I did not have one of these available recently I managed to meet an emergency and developed a formula that works fine on willow.—BEN J. STUDER.

Blakeslee Co. Enlarges Plant

G. S. Blakeslee & Co., manufacturers of degreasing machines and metal parts washers, announce that ground has been broken and construction started on a two-story addition to their present plant at 19th St. and 52nd Ave., Cicero, Ill.

This addition will give a 50% increase in their present manufacturing floor space, as well as doubling their present office space. The addition is the result of increased demand for Blakeslee degreasing equipment and Blacosolv, the degreasing solvent used in these machines.

Pre-Finished Metals in Color

"Tint-Metal" is the name of a newly developed line of plain and crimped pre-finished sheet metals for utility and decorative purposes. The colors are electro-bonded to the metal, hence their adhesion and luster are not harmed by stamping and forming operations. Base metals include copper-zinc, copper-steel and copper-tin; sizes up to 36x96-in., all gauges; colors are yellow-gold, red, blue and green; finishes include bright, satin and striped; patterns, crimped and scored. The company offering "Tint-Metal" is the American Nikeloid Co., Peru, Ill.

Bleached Wood Finishes

by Frank J. Norton

A foreman finisher reveals some practical information about the correct use of certain bleaching solutions and describes the exact procedure to follow in producing a clear bleached finish on maple surfaces... with added comments about patching damaged places.

THE POPULARITY of bleached or blond finishes is bringing into wood finishing rooms many changes in methods and materials used, as well as changes in production schedules.

Some of the older types of bleaching compounds and solutions have been found wanting in their ability to completely decolor the woods used.

Most of the modern bleaches with which I am familiar are of the two-solution type; that is two separate solutions are used. One solution is applied all over and then the second solution must be applied after the first has set or dried the required length of time, as stipulated by the concern supplying the solutions. These two solutions act upon each other to produce a bleaching action.

Use Rubber Gloves and Goggles

The bleaching solutions (that is the ones I have in mind) are very strong and should be handled with great care. I would advise the use of rubber gloves and goggles . . . . as a drop from a splash or splatter from a brush bristle will harm the skin and might cause serious injury to the eyes. Should any of the liquids be spilled on the person an immediate washing with water will dilute it enough to prevent any serious burn.

It would be well to consider the veneers in woods to be bleached as to their adaptability to bleached finishes. Many woods and veneers have a tendency to return to their original color after being exposed to daylight. Among the woods notorious in this respect are Honduras mahogany and some of the walnuts.

I believe that most furniture manufacturers are setting their standards too high on bleached finishes. By this I mean that many are striving for the utmost in bleaching and trying to hold it. When this is done many pieces must be rejected because of the numerous little defects which show up on bleached pieces—which would not otherwise be noticed; among these are dark colored knots, mineral stains, places where veneers have been polished very thin and glue be-

gins to show through to the surface, etc.

Use Glass Containers

In using the two solutions of bleaches it is recommended that they be used from glass or earthenware containers, as they are destructive to most metals and the metals also reduce their efficiency. However, there are bleaches that can be sprayed from spray guns fitted with cup containers. These one-coat bleaches do not, apparently, attack the aluminum cups with any great rapidity. All spray equipment should be thoroughly washed with warm water after each day's use.

Raised Wood Grain Must Be Sanded

Bleaching solutions usually cause the grain of the wood to become raised, so the treated surfaces must be sanded. Some of the earlier types of bleaches left a heavy deposit of silicate of soda which dried very hard and required a lot of sanding. This characteristic has been eliminated from many of the newer bleaches and, as a result, they are much more satisfactory.

One of the finest pieces of equipment for this sanding operation is advertised regularly in INDUSTRIAL FINISHING. It does an exceptionally good grade of work and speeds up production, as well as conserving the man energy which heretofore slowed production in many plants—especially during the last few working hours of the day. These portable machines are small enough to be used with one hand.

If or when finishing costs will permit it, I would advise a sanding with medium coarse abrasive paper (about No. 3/0) and then blow the dust off with compressed air. A sponging with alcohol or warm water may also be used, but it will raise the grain more at this time. It will neutralize the bleaching solutions that have dried but whose reactions to each other were not completed. Frequently a bit of this trapped bleaching solution will come to the surface through the lacquer coatings. After the wash and when the pieces are thoroughly dry, sand with No. 4/0 or 5/0 sandpaper.

Details of Bleaching Maple

Since so much maple is used today, a detailed method of producing bleached maple should be timely.

After the first bleaching, as above suggested, all bleached surfaces should be inspected and all parts not bleached light enough should be given a second application of the No. 2 solution.

The sanding operations after bleaching have also been suggested in a previous paragraph. A coat of bleaching lacquer should be applied after the sanding, as it will help seal the bleached woods from any subsequent lacquer coating and will help to hold the bleached color.

Owing to the fact that much of the maple wood and veneers carry mineral stain in the form of streaks throughout the wood, for which a bleach is as yet unknown, veneers and woods should be carefully selected to eliminate these defects as much as possible. Occasionally the finisher does find them, and then he must use suitable materials to hide them. This can be done to an extent by the skillful application of paint. If the mineral colors are not too

dark, only a "fog" or "fuming in" of the paint is necessary. Should the parts be dark and require a heavy coat of paint, hand graining will have to be resorted to. Should the work be on birds-eye maple, very little of the "fuming in" should be done as it will kill the beautiful grain of the wood.

Immaculate Cleanliness Necessary

It is not desirable to spray lacquer coatings on bleached work in the same booth with work of various colors, whether the colors are pigmented colors, such as enamels and paints, or water stains. The equipment used in applying lacquers on bleached pieces must be immaculately clean. This also applies to spray booth walls and floors. Such equipment as the spray gun, fluid hose and material container must be checked over carefully if it has been used in spraying regular run-of-the-market lacquers as they carry many solids which by nature are of an amber color or tone; and if a coating is allowed to gather on the inside of the material container it will be dissolved to some extent by the water-white lacquer used on bleached work, and it may have a slight coloring effect of the finished piece.

Clear Lacquer; Rubbing

In selecting lacquer for the finish coatings great care must be used to select only materials of the white or color-free type. Many manufacturers have decided it is not necessary to produce a full-bodied finish on bleached work. In full-bodied finishes a lacquer that carries a goodly amount of solids must be used, and nearly all solids will yellow or darken with age and will cause the finished work to "turn color" on the show-room floor or in the customers' homes. To eliminate this as much as possible, lacquers that are very low in solids (not unlike the good old lacquers of 1918-'20) are used. Two or three coats are applied, with the sanding operations between coats when needed. I mention this because many finishers do not think it necessary to sand after each coat.

When the last coat is thoroughly dry and hard, it is ready for rubbing. On full-bodied work the felt-block and pumice stone is still best. If oil is used as a lubricant a white paraffin oil will be found very good. On medium grade work a good job can be produced with steelwool and wax. Since steelwool has a tendency to ride over the small high spots and dirt nibs, I would suggest a light sanding with No. 7/0 sandpaper before the steelwool is used. Steelwool can be used either dry or wet with wax. Again, a white wax should be used.

Patching Bleached Finish

Any patching after the steelwool and wax or rubbing operation must be carefully done. "Burn-ins" with stick shellac are usually conspicuous. On small dents a water-white flat lacquer (which has been left in an open pan to thicken) dropped into the dent with a small pencil brush, makes a nice job. The drop will have to dry hard all the way through, so it is not a rapid patch job. After it is dry a razor blade used as a scraper will bring it down flush with the surrounding surfaces. A slight rubbing with steelwool and wax should be done after scraping. This method of patching can also be used between second and final lacquer

coats. If the work is done carefully the patching will be absolutely invisible because the final coat of lacquer will eradicate all small scratches which sometimes occur during the scraping down process; and it will also give the same sheen to the entire surface.

Welded Piping Systems

The advantages of welded joints in installing piping systems are discussed in "Welded Piping," a 12-page, illustrated booklet, published by The Linde Air Products Co., New York, N. Y.

Subjects of particular interest to builders, architects and engineers are treated in sections on: Pipe and services to be welded; lighter than standard weight pipe; fast, economical welding methods; layout, drawings and specifications; welded joints and fittings; plan of construction; shop and field fabrication, and piping erection.

Luminous Panels on Normandie

According to a letter from the Grobet File Corp. of America, 3 Park Place, New York, N. Y., "The new French liner Normandie is equipped with 600 panels painted with 'Dialux' luminous paint, which not only enhances the beauty of the ship, but is an added protection for the safety of the passengers in case the lighting system should go out of order.

Porcelain Enameled Office Building

The new porcelain enameled office building of Davidson Enamel Products Co., Inc., Lima, Ohio, as shown in the accompanying illustration, exemplifies the simplicity and beauty of modern architecture.

Douglas Andrew, Lima architect, designed the building to show the wide variety of finishes, colors and designs available in porcelain enamels for architectural uses. He achieved distinctions in well-balanced fluted parts, rounded corners, embossed side panels and two decorative plaques, showing characteristic views of enameling operations.

The plaques show nine colors, ranging from chocolate to ivory. Areas above and below the window course are in semi-mat ripple finish of a light buff color. The window course is light tan with snap-on moldings, and the area about the doorway is ivory. The copying is tan and chocolate. Pan and semi-pan parts are used on the exterior.

Much of the interior is covered with porcelain enamel in light tans, browns and an ivory mat finish. Interior sheets are backed with plywood.

The various porcelain enamels are on 16-gauge Armco enameling iron, manufactured by The American Rolling Mill Co., Middletown, Ohio. Pyramid snap-on moldings hold the sheets in place.

The building is completely air-conditioned. Beauty and utility are combined in acoustical cork ceilings, venetian blinds and glass brick windows. All offices have steel furniture.

Refrigerator Finishes

IN THE SMALL FACTORY

Having been a regular reader of your magazine for some considerable time, through the generosity of my employers who are regular subscribers, I would like to submit an article on synthetic bake-finishing in a small factory, for your personal perusal and . . . . in due course, some comments from your many expert readers —should you think it or any part worthy of your magazine.

I have often wondered, after reading your magazine and seeing photos of finishing departments, with their air conditioning, conveyors and ovens that are in U. S. A., how a job can possibly be produced here in Australia that would compare with your finished articles. However, it's done, or at least, generally speaking, our efforts are producing what we think is a first class grade in the matter of actual finish.

I have been guiding a spray gun for approximately 14 years, doing nearly every class of work from automobiles to ladies' straw hats, under varied conditions. At present I am in charge of the finishing operations in a very progressive refrigeration manufacturing works, and I would be greatly in your debt if I could get in touch, through your columns, with any tradesman or foreman who would be willing to correspond, giving any information whatsoever concerning conditions, shop routine, high and low baking, and their relative importance to the industry; also the matter of colors, etc., in mode in U. S. A. I would do my best to make my answers interesting to any person willing to correspond.

Well, Mr. Editor, as you will notice, my article is very lengthy; still I have not touched on the matter of thinning, materials available, equipment and air pressures, which would be a lengthy article of its own. I have never taken on the pen and ink trade before, but with a good pair of scissors and a long blue pencil you may be able to get it down to magazine size.

Should any of your Australian or New Zealand subscribers contemplate synthetic finishes, I will be pleased to send on any information I could on the matter of shop-finishing problems and general shop routine.

Fred. W. Hearn.

by Fred W. Hearn
of South Australia

THE GENERAL use of synthetic enamels has in no way altered the main rules of the finishing shop, but has, in fact, intensified the battle against moisture, heat and dirt-laden air. All of these features were a nightmare to lacquer finishing rooms, but with the advent of synthetics the position was not at all minimized but, to large extent, was responsible for the introduction of air conditioning and baking ovens in most industrial finishing rooms.

Undoubtedly the adhesion to metal, elasticity and appearance of the finished article are greatly enhanced by the use of synthetics. This type of work requires another class of tradesman, quite different from the lacquer sprayman or the sprayman from a refinishing shop. He must have the skill of both but his class of work will be different from either because on a lacquer finished article the compounding and sanding of that job gives it its merits, whereas synthetics depend entirely on the man with the gun, cleanliness and the oven, to bring to the eye its wonderful density, smoothness and gleaming qualities.

Metal Cleaning

Pages could be written on this operation and still not enough

stress given to the words, "Thoroughness." The cabinet is first immersed in a trichlorethylene vapor, in a degreasing tank, which removes all traces of oil, grease, etc., and is allowed to cool before entering the acid wash. Any rust that is discernible should be sanded with a heavy grit sandpaper to make doubly sure of removing same and also to help the acid in its work.

A section of the cabinet is next washed with acid solution, using a brush and giving the surface a good scrubbing with wire wool. This will assist the solution to etch the metal for better adhesion with the primer. Each section of the cabinet is wiped clean and dry whilst the solution is still moist, before giving all welded joints, corners, etc., a good blow-off with a strong force of air (which has been cleared of oil and water) to remove any surplus acid from inaccessible places. Following this, the cabinet is given a thorough wash with methylated spirits, wiping same off before it has dried. Make sure that at no time do bare hands come in contact with the metal.

Before priming, wipe all over with a tack rag. This operation at this stage will save time when scuffing the primer. Some of the fluff nibs are very stubborn and it is much easier to wipe them off before priming.

The Priming Coat

The primer should be only a medium coat, as the function of this material is only for a bond, and not as a covering coat as generally used. If the primer has been properly strained — and no material should be used otherwise —and the tack rag used, it is possible at this stage to go straight ahead with the finishing materials, but generally a light scuffing with No. 400 wet-and-dry sandpaper is given. Using a high class steel and the metal-finishing department working in conjunction with the paint shop, stopping or surfacing is practically eliminated. Give the finishing enamel a light dry scuffing between coats with No. 400 sandpaper and a wipe all over with the tack rag, allowing the cabinet to cool between each bake.

Spraying; Baking

The finishing material is sprayed at approximately 75-lbs. gun pressure .... just a nice flowing coat.

The most satisfactory method of getting a first-class job, in regard to coverage, gloss, etc. (allowing for a variation in material and that no two spray operators are similar in actual work) is to have all material ready thinned and mixed to correct viscosity. Wherever practicable, it is suggested that one operator be used for the priming and another for the finishing. Make sure that all cabinets are complete with doors for each bake. For instance, if a slight discoloration were to take place in any one bake, it would not be discernible if the cabinet were a complete unit, whereas an odd slightly discolored door would show up in a perfectly baked cabinet.

Spray from Bottom Up

Also regarding spraying, the elimination of overspray is a major factor in the ultimate appearance. Presuming that all cabinets are of the complete welded type, that is the top of cabinet being a part of the actual side panels, the best method is to begin spraying sides, back and front from the bottom, working upwards until the job is completed, minus, of

course, the top. The top should be last, as whatever over-spray has collected will be readily absorbed by the material when applied.

The up and down routine has a great many disadvantages; for instance, the operator is never in balance, as in the former method. When beginning from the bottom, the operator is crocking and gradually straightens to a standing position, which gives him perfect control over the gun. In this way he can watch the lapping of strokes and flow of material more easily. Another factor: By working upwards and across, the force of air is directed to the ground only in a sideway motion for the first few strokes of the lap—not directly on, as would be the case in the up and down method of directing the gun, which would disturb any spray dust, etc., from the floor; also, the top of the cabinet would receive a greater amount of over-spray.

Sanding Procedure

The sanding of a cabinet has a great many of its own worries when the steel is at all inclined to be pit-holed or file-marked and has to be surfaced. Water is the best medium in sanding, as other materials have a tendency for the rubbing waste to beome embedded in the surface when allowed to dry, and can only be removed by careful sandpapering again. When hand sanding, the paper should be held tightly between thumb and first finger and not rubbed with the fingers; use them as a pad, working always in the one direction on the surface but across the fingers. Should any pressure be put on the fingers when moving them away from the body the finger marks can be readily discerned, having the appearance of railway lines. At all times use a rubbing pad wherever practicable —and the right grit of sandpaper is essential.

Retouching Damaged Places

Retouching a cabinet for sags, runs, knocks, etc., is in a sphere of its own and, if possible, this particular work should be allotted to a person who has had experience in all phases of the trade. This work takes time and requires great care on the part of the operator. The work cannot be hurried, as a rushed job at this stage may mean the cabinet having to be resprayed and rebaked. This would probably necessitate the refrigerating unit being removed, as most refrigerating equipment will not stand the oven heat.

In the case of a sag, it will be found that only the surface is dry, and it will be necessary to sand practically to the bare metal to get a feather edge. On obtaining this objective, I recommend a light stopping, followed by a couple of coats of heavy surfacer (meaning the material is not to be thinned to a great extent). On being sanded with No. 400 wet-and-dry sandpaper, the surface is brought back to its original condition. Following this, two coats of lacquer (supplied to match color of synthetic used) are to be sprayed on. This touch-up should at all times be localized as much as possible, and all lacquer work should never be sprayed very wet, as it may have a tendency to make the synthetic pulpy and make the edges of the original touch-up creep.

Small knocks can be touched up with a camel-hair brush, laying the edges off with a brush moistened in thinner when dry.

New Automobile Colors

by E. French

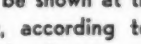
MANUFACTURERS of automobiles, in selecting colors for their 1938 models, have drawn upon the artists' palette for new and more pleasing shades and tones, even naming the shades after the great masters from whose palettes they were chosen, with the result that in general the new models will appear in lighter and clearer colors.

Metallic Colors Popular

Probably the reason metallic has grown so in favor since the show last year, when a limited number of models in this type of finish were shown, is because many shades have been made far more attractive by the addition of metallic. An example of this is brown in which there has been a pronounced revival of interest, due entirely to the pleasing shades that can be obtained with the combination of metallic. Consequently brown, along with green, will be much more in evidence on next season's models than for a long time.

So emphatic has been the demand for metallics that one manufacturer of a low-priced car will use metallic in every color, with the exception of maroon, pale green and black. This same plan will be followed more or less generaly by other companies in that same group of manufacturers. Back of this whole idea of metallic domination, and of presenting new and more pleasing shades, is extensive consumer research, with the result that all of the automobile shows will display colors in various shades that will please every taste. Incidentally, colors, or color combinations used abroad, have not the slightest influence on American manufacturers, nor have colors used in women's styles.

Metallic colors for automobiles have become so popular during the past year and the demand for them has become so great that they will dominate the 1938 models to be shown at the New York show, according to Elizabeth French, director of Duco Color Advisory Service, who is closely in touch with manufacturers in the selection of automotive finishes to be used during the forthcoming year.



One manufacturer of a high-priced car will break all precedents by featuring a new very soft shade of green, instead of one of the usual autumnal colors. It will not be in metallic, as demand for that type of finish is

not so great in the highest-price field. This car will have harmonizing green upholstery and top material and piping of a pearly kid that will produce a highly artistic effect. Another manufacturer, maker of a low-priced car, will place a demonstrator on exhibit in "Indian Sun Tan," a new shade verging onto rust.

More Striping; Fenders in Color

There will be a little more striping than on the current year's models, and that on cars whose lines will accept it gracefully. Fenders will be exclusively in the color of the body of the car. The customers' research developed these facts regarding color:

Black will continue as the biggest seller, but every year finds it losing more ground. The biggest inroads into black have been made by the metallics. There is much interest in dark clear purplish blues with metallic content, as well as metallic blue greens (turquoise) and bright clear medium metallic blues. There is little interest displayed in blues of any sort that are not metallic.

Metallic Greens Favored

Pure light metallic green and gray greens, both metallic and non-metallic, are favored. The very light, almost cream and gray greens in evidence this year will be shown very little on next year's models. Brewster greens are becoming increasingly important. Regarding grays, bluish casts predominate in the metallic mediums, with some interest shown in greenish grays and gunmetal metallics. Non-metallic grays tend to blue and neutral shades of medium tone.

The most important brown shades, and those most responsible for the tremendous interest shown in browns lately in contrast to several years ago, are the golden metallic shades. Beiges are lighter and redder. Rusty brown shades will also be noted to some extent, particularly in metallic. Interest in maroons, the least popular of all automobile colors, centers in medium shades, free from purplish or brick-colored tones. There is some interest in metallic maroons, particularly for show purposes.

Shutter Awnings

SHUTTER AWNINGS are a new type of awning which becomes an integral part of the architectural design of the home. One make of shutter awning that I have in mind is constructed of wooden blades or slats which are adjustable to any desired angle or pitch from inside the room. In a closed position, the awning blankets the window opening in shade. As the blades are opened to the horizontal, complete shade is maintained, yet free circulation of air is admitted between the blades. As the blades are opened wide, varying degrees of sunlight are permitted to enter as desired.

These awnings shut out the sun rays and rain and at the same time offer a new protection for rugs and drapes. They do not obstruct view or ventilation.

Finishing Operations

Weatherboard type of slats are used. These are of cedar or redwood. The slats are first impregnated by dipping them into a shallow receptacle of impregnat-

ing varnish. The varnish is reduced to proper dipping consistency, as determined by a Baume reading. After immersion, the slats are immediately withdrawn and a bristle brush is hastily drawn over their edges to insure freedom of drips. The slats are then placed at a 45° angle for drying. Drying is carried on for an overnight period in the finishing room.

Customarily, after impregnation and drying, the slats are placed in stock racks against the time when they may be used. They may, however, be cut and coated after the overnight drying period. The object of this operation is to preclude any further absorption of moisture.

The shutter awnings are cut to and built to standard size and/or specification. The shutter is completely assembled before painting. Complete assembly involves metal angle-iron backing, metal hinged arrangement for tilting, and the wooden blades.

After assembly and prior to undercoat application, a lacquer knifing glaze is applied where necessary. This "putty" is given an air-dry commensurate with the film thickness—customarily, a 4-hour dry.

The shutters are then placed on a monorail conveyor, and synthetic undercoat is applied by spray gun to the entire assembly. A full wet coat application is given; then the shutters are placed in an isolated section of the assembly room to air-dry. This range is from a 4-hour period to overnight, and is dependent upon production. A white synthetic undercoat is customarily used, but this may be tinted to the corresponding color of the enamel. The undercoat is not sanded.

The enamel coat is of the quick-drying synthetic type. A full wet spray application is applied over all, including metal parts. The shutters are air-dried overnight before packing and/or shipping. Pastel shades, shutter green and similar colors are used.—M. C. ROBERTS.

Changes at Roxalin

Albert Miesem, Director of Sales for Roxalin Flexible Lacquer Co., Inc., Elizabeth, N. J., announces that Robert K. Hungerford, who has represented the company in New England, operating out of New Haven during these past 12 years, has been appointed to assist him. Mr. Hungerford's title is that of Sales Manager.

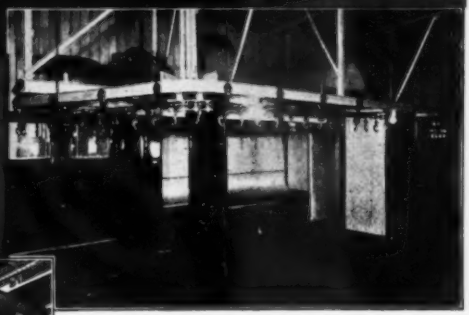
Frank Thomas and John Towart, who have received extensive laboratory and home office training, have been under Mr. Hungerford's wing in the field and now take over his former territory.

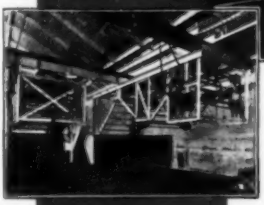
A new and important addition to the Roxalin plant is the $10,000 construction job to provide more space for the company's laboratory staff. Now two highly modernized laboratories are separately maintained. One is devoted exclusively to cellulose-type finishing materials under the direction of M. A. Dorian. The synthetic and oil-base laboratory is in charge of W. H. Stephens.

Revised Hand-Graining Book

The third edition of William E. Wall's book entitled "Graining, Ancient and Modern" has been revised and enlarged by F. N. Vanderwalker. The book contains 224 pages, 6x9-in. including 64 full page plates, mostly in color, and many other illustrations. Its contents are conveniently divided into 50 chapters—all about the art of hand graining to reproduce the exact grain, figure and color of variously-cut cabinet woods. All of the information is thorough, practical, easily understood and interesting. The book is bound in stiff red covers and lettered in gold; price $5.00. Copies can be obtained by writing to Practical Publications, 222 E. Ohio St., Indianapolis, Ind.

Complete FINISHING Systems



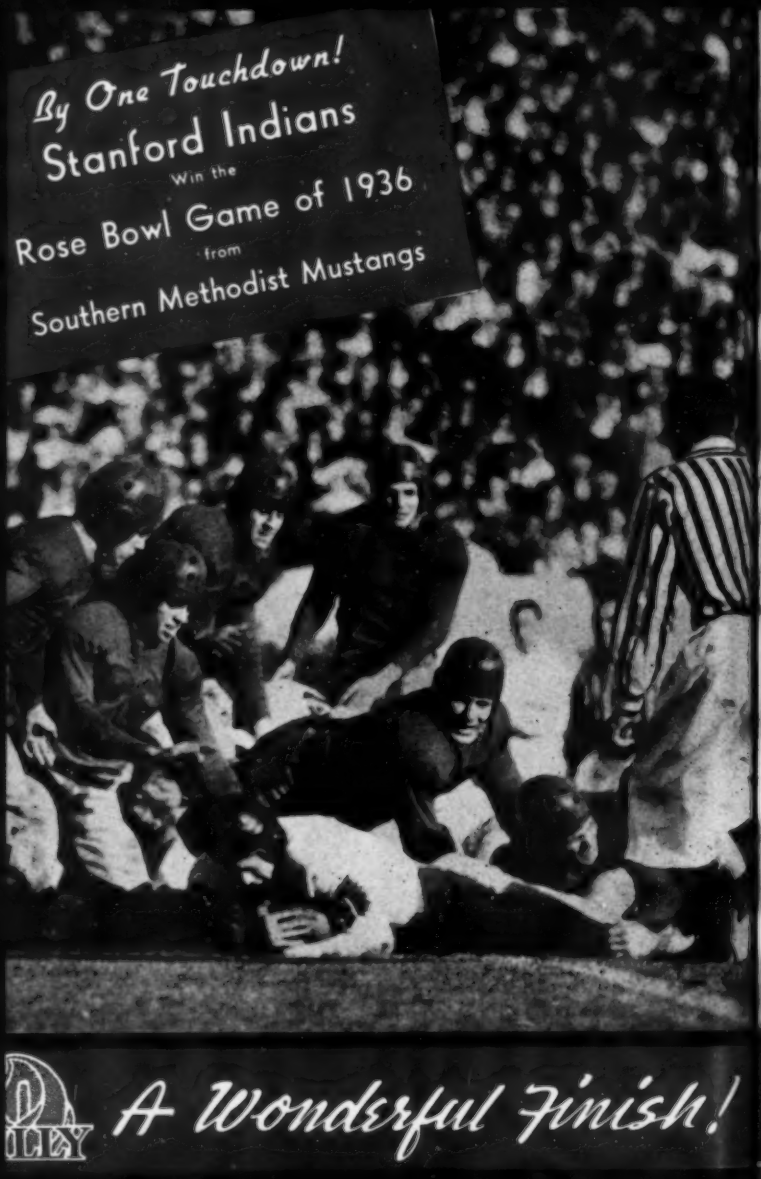


Designed and Co-ordinated with a Thoroughness which comes only from Years of Practical Experience

When you consider the installation of a complete Finishing System, or any unit thereof, you are primarily interested in the operating efficiency of the equipment in every day production . . . the operating efficiency of equipment of this type, which requires such close co-ordination, depends entirely upon the practical experience and the knowledge of modern production methods back of the engineering staff of the organization installing it. That is why more and more manufacturers are today turning to Mahon for complete, properly engineered, thoroughly co-ordinated, efficiently operating Finishing Systems.

Your inquiries are solicited.

MAHON



A Wonderful Finish!

Stanford Finishes Out in Front in Thrilling Football Classic

The Pasadena Rose Bowl football game is always a colorful spectacle, always full of thrills and sometimes marked by an unexpected finish. Such was the case on January 1, 1936, when the Mustangs of Southern Methodist University played the Indians of Stanford. Stanford had lost two previous Rose Bowl games and were determined this time to win. They did, by one lone touchdown, with a final score of 7 to 0. On statistics, Southern Methodist should have won, but Stanford struck hardest when it counted most. Oddly enough, the winning touchdown resulted from a 22 yard forward pass, a medium in which Stanford was not supposed to excel, followed by a trick play which sent the ball over the line. The balance of the game was marked by Stanford's aggressive play to protect their lead, breaking up the passing game with which Southern Methodist was expected to win. It was a thrilling finish—for California—in fact for all the 85,000 fans that jammed the Rose Bowl that New Year's afternoon.

And, Speaking of Wonderful Finishes

That's the kind of finish that Lilly has always made—dependable in every field of industrial finishing. Lilly products have always been outstanding in quality and dependable performance. Lilly's years of experience and laboratory cooperation are always at your service in connection with any industrial finishing problem. Write us about immediate or future requirements.

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Branches: Chicago, Ill.; Grand Rapids, Mich.; Gardner, Mass.

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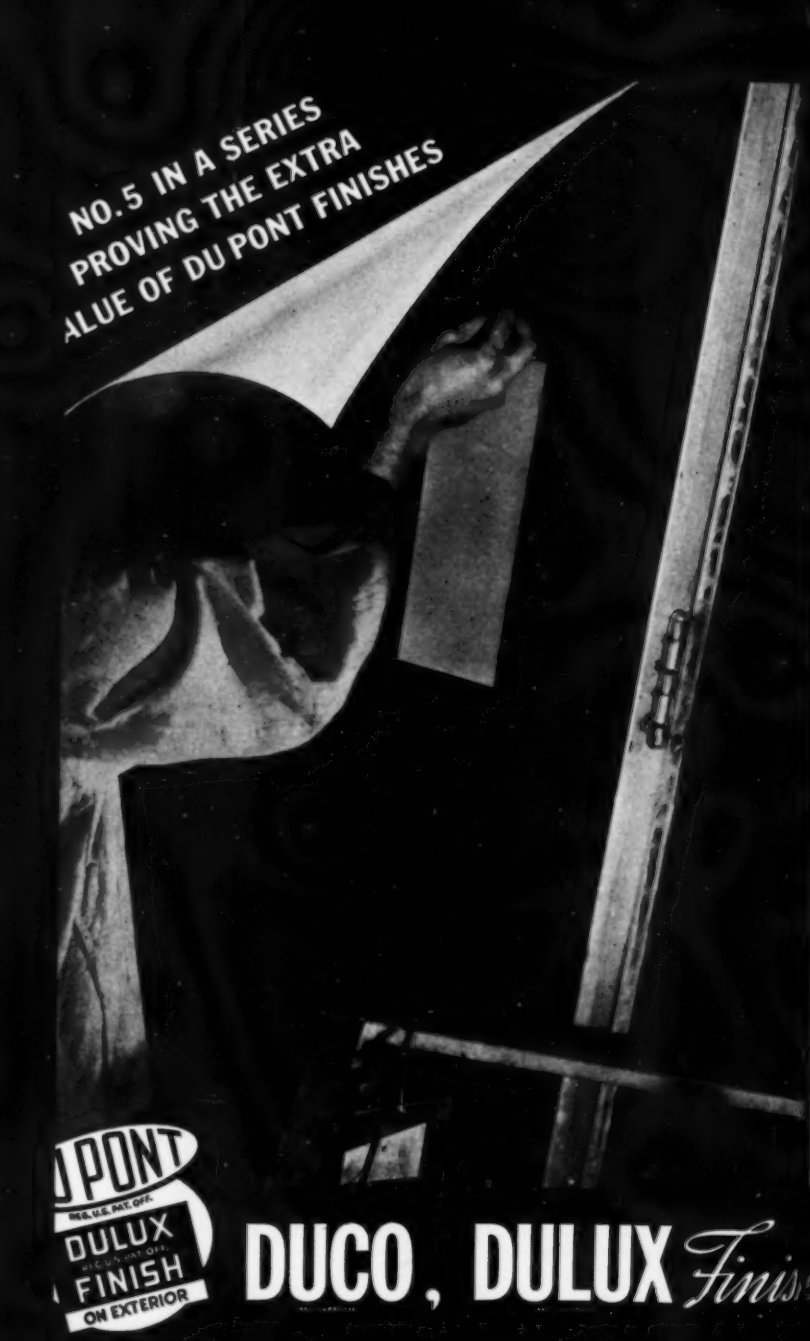
INDUSTRIAL FINISHES

LIL

With the Right Finish, You'll Finish Right


NO. 5 IN A SERIES
PROVING THE EXTRA
ALUE OF DU PONT FINISHES
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SMALL-SCALE BAKING TESTS

TO HELP YOU MAKE

LARGE-SCALE SALES

By duplicating *your* baking conditions here in Du Pont laboratory baking ovens, chemists produce finished articles which enable them to make performance tests that mean something in terms of your finished product. No guesswork on your part —you *know* how these finishes will act in giving your products the extra value that means extra sales and fewer complaints.

* * * *

Pre-tested—That single word explains one big reason why Du Pont Finishes are standard with so many modern manufacturers.

The greater beauty and durability of Du Pont Finishes... their covering, hiding, and spreading qualities, their drying time, gloss, flexibility, adhesion, weather resistance, color retention under *every* kind of condition . . . all have been proved by chemists in Du Pont laboratories before they are used on your products. The baking oven shown at the left is just one step in Du Pont testing procedure. There are hundreds of others.

You can expect Pre-tested DuPont Finishes to give *your* products the same plus value they are giving the merchandise of so many other manufacturers.

Standardize your finishing with Du Pont Finishes. You'll find it pays to give your products the extra value your dealers and their customers are looking for today. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Delaware. Canada: Canadian Industries, Ltd., Toronto. Great Britian: Nobel Chemical Finishes, Ltd., London.

DU PONT

REG. U.S. PAT. OFF.

nishes of Enduring Beauty

When you buy ROSS AIR HEATERS you buy—

There is nothing to recommend the heater that has "lots of speed but no control" over the heater that has "not much speed." For modern industrial processing, the proper combination of both SPEED and CONTROL is most essential. Ross Air Heaters are always installed with AUTOMATIC TEMPERATURE CONTROL so that continuous uniform oven temperatures are steadily maintained regardless of variations in load.

Write for our Bulletin 122 for full details or call in a Ross engineer. There is no obligation.

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PIONEER BUILDERS OF AIR HEATERS

SANDPAPER
in the Finishing Room—II

by W. M. Torrence

The kinds and grades of abrasive paper that are now available and generally used for dry and wet sanding between applications of priming and intermediate coats of finishing materials . . . with suggestions about the cutting and use of sandpaper so as to get maximum in efficiency and economy.

▼ ▼ ▼ ▼

THE ACTUAL use of abrasive papers in the furniture finishing room embraces mainly the smoothing or cutting down of sealers, primers and undercoats, general scuffing between coats, and as a preliminary adjunct to rubbing — or, as in some cases, composing the entire rubbing operation.

For the dry sanding of lacquer sanding sealers and similar materials which are formulated particularly to facilitate sanding, dry paper of No. 5/0 to 7/0 are commonly used, depending upon the preference of the user, the speed or quality of sanding required, and the nature of the material being cut down. In general garnet, aluminous oxide and silicon grains are admirably adapted to this usage insofar as performance and results are concerned.

Where the economy element enters (and where doesn't it?) where a desire exists to get the most out of the paper, and where no confusing issue enters such as stocking a paper for more than one purpose, the silicon carbide paper will probably be found more generally and consistently satisfactory. Garnet papers will perform with entire satisfaction on this type of work, but may be expected to show a somewhat shorter life in actual production per sheet.

Cutting Sandpaper Sheets

It is the usual custom to use this paper in the form of quarter sheets, dividing it by creasing the paper through the center in both directions and tearing it over a sharp edge or corner into four sections. This gives pieces that are 4½x5½-in., which is presumed to be the most convenient size for handling. The economical cutting of sandpaper sheets depends upon local conditions — whether it is used by hand only or on a block, and upon the skill of the sander. Some experienced sanders have the thrifty habit of turning a piece of paper in the hand in order to use almost all of the

coated surfaces. Others, regrettably, use it in only one position, actually employing the cutting faculties of only the central portion and then discarding it. It is wise, therefore, to consider the problem purely from the standpoint of area actually utilized. The answer may be, under certain conditions, to tear the sheets into six pieces each 3½x4½-in. Maybe that inch you have been wasting will give you two more pieces from each sheet.

Instead of cutting the sandpaper in such a manner as to leave a finger grip area extending up each side of the block, if the piece be made nearly twice as long and wrapped around the block starting with the cutting face as near as possible to one end, it may then be shifted over to use the other half, thus reducing the finger grip area waste considerably. Instructions to sanders in thorough utilization of sandpaper, together with the simple trick of tapping out dry powder or cuttings frequently, will contribute surprisingly toward holding down the sandpaper bills.

Wet Sanding

It seems to me that, up to the present time, the marked advantages of a wet sanding operation (especially on undercoats) have not yet been generally appreciated in wood-finishing circles. There should be no question of the validity of the statements:

1) That generally speaking, the thoroughness of sanding on undercoats cannot be exaggerated, where quality of final finish and ease of rubbing are concerned.

2) That thorough sanding requires skill and time; is, in brief, expensive.

3) That materials formulated to sand with a minimum of speed and ease must do so at a sacrifice of some other valuable property (usually toughness or "length") to say nothing of the dust released in the air and to be removed from the work—and the hazard of extensive scratching.

There is no type of undercoat used in furniture finishing which cannot be sanded more rapidly, more cleanly, and more thoroughly by "wet" sanding—that is by using a neutral liquid cutting agent to lubricate the paper—than by dry paper alone. Finally, and by no means least, where wet sanding is practiced it is possible to use much "longer" tougher sealers with the inevitably vast improvement in the strength of the entire finish film.

"Wet" sanding, as is used as a rubbing operation, usually calls for the use of water, a neutral petroleum oil, or petroleum naphtha, or a combination of the latter two. The wetting agent is applied to the surface with a swab or flat brush, or the paper is simply immersed in the fluid occasionally to keep the work wet. It is necessary, in the selection of a cutting agent, to choose one that is chemically inactive with the finish film itself. Water, the cheapest, is always available, cuts cleanly and rapidly, represents no fire hazard and is inert with regard to any conventional film. However, it does require considerable care and effort in cleaning, especially if the work is to be recoated; and its effect, in excess, on glue joints and woodwork is generally too well known to require discussion. In the case of many materials in the varnish type and high-resin types, there is no alternative.

In the case of nitrocellulose

1617

Reg. U. S. Pat. Off.

The Ultimate!

in

Clear Metal Lacquers

A Quality Lacquer — *1617* costs less in the long run, through improved mileage, reduction in rejects and spotting out problems.

It will protect and preserve finishes — even out of doors — with a minimum of discoloration.

It has excellent adhesion, is extremely hard, and resists wear.

It is equally desirable for spray or dip application. Try *1617* — the Original Non-Spotting Lacquer — and become convinced.

STANLEY

THE STANLEY CHEMICAL CO.

EAST BERLIN, CONN.

LACQUERS - SYNTHETICS - ENAMELS - JAPANS

A Subsidiary of THE STANLEY WORKS, NEW BRITIAN, CONN.

products it is usually advantageous to use a high-flash naphtha which will stay wet sufficiently long to keep the work wet and yet eventually evaporate completely. This greatly facilitates cleaning. Where high-polish work is being done and where work will be recoated after wet sanding, it is important that the naphtha contain no free oil. A few drops on unsized white paper should leave no trace whatever when evaporated.

The use of mineral oil, either alone or diluted with naphtha, supplies a lubricating colloidal film which minimizes scratching and provides a dull or satin rub. In high-resin materials or on a slightly "green" coating, a "sweat back" or graying may be expected from the oil—which is of no assistance in attaining a high polish.

Wetting the Back of Dry Sandpaper

The almost universal custom of wetting the back of dry sandpaper when hand sanding has from time to time occasioned no little controversy as to its merit. Since the main purpose in this practice is obviously to increase friction between the fingers and the paper to facilitate gripping, and since many sanders are addicted to the regretable practice of chewing tobacco, an accomplishment of the former and a necessary outlet for the latter are thus happily and harmlessly combined. In the event that a wet pad or sponge is supplied to wet the paper backs, reasonable care must be exercised to avoid wetting too thoroughly, that is, to the extent of softening the glue binder sufficiently to loosen its grip on the abrasive grain. Where very irregular surfaces, turnings, etc., are to be sanded it is a decided advantage to have the increased flexibility of the moistened back sandpaper. Some sanders apply a dab of varnish to the back of the paper, which gives excellent adhesion to the fingers.

It is advisable to purchase finishing papers from a reputable concern, in the grade and grain required by your work. Keep them in a dry place of reasonably even temperature, and don't let the sanders discard a piece until it is unfit for further use.

If in doubt about the grade or type of coated paper exactly suitable to your needs, call in your sandpaper man and ask his advice. He's a specialist, knows his business, and can make recommendations on your work which will save time and money and improve the results.

The use of clean air and strained finishing materials will save much sanding and rubbing.

PIANO-CASE FINISHING

Here you see a workman brushing on a coat of quick-drying combination filler and stain—the first finishing coat that goes onto the wood in the white. Photo., courtesy Sherwin-Williams Co.

Of all the living things in nature there is nothing to equal the stately, centuries - old beauty of the giant Sequoias, or redwood trees, of California.

And this same unique combination of beauty and durability that distinguishes the redwoods from all other trees, makes A & W "Tailor-Made" Finishes outstanding in the field of industrial finishes for metal products.

Manufacturers are now thoroughly convinced of the importance of giving their products a finish that retains its attractiveness through all incidental handling from the factory to the user. That's why, more and more, they are adopting A & W finishes that have been "Tailor-Made" to meet their specific requirements.

Call in the A & W representative to help you with your metal finishing difficulties.

AULT & WIBORG CORPORATION
NEW YORK, N.Y. CINCINNATI, OHIO

Builders of Fine Industrial Finishes

Pinholes and Blisters in Metal Finishing

Editor's Note: Here are two more answers to the question H. M. Co. submitted under the above title, see August issue page 50.

On the question submitted by H. M. Co., I noticed the answers given. Your problem intrigues me, for a similar one occurred to me (only it was a baking synthetic undercoat and final coat that we used) and the service men from two of the largest paint companies were unable to locate the trouble. However, I traced it down by a process of elimination. It was a too porous surfacer. If you ever find out what proved to be the cause of your trouble, I would appreciate it if you will pass the information along.—JAMES A. BEDE.

From a journeyman's viewpoint your blister and pimple trouble strikes me as a fault of workmanship rather than materials. To eliminate your trouble, I would inspect the casting for cleanliness. Clean with naphtha (not kerosene) using clean wiping rags. If this isn't done you can easily detect oily spots on the surface of the filler which will cause trouble.

The filler should be well mixed before applying. Avoid handling the casting with greasy hands at any time after the cleaning process. All tools and containers should be checked for oil or grease.

If you sand the filler dry, be sure that all of the sanding dust is removed; otherwise pinholes will show up when the sealer is applied. Their nature will be first

Questions Answers

in the form of suction holes; then later, when the lacquer is applied or possibly still when the sealer is drying, the blisters will lift. The reaction quite often varies.

If you use a wet sanding operation, the sediment should be wiped off while the filler is still wet. If allowed to dry, the sediment will appear to be part of the solid surface, but when the sealer is applied it will loosen this sediment. Ample time should be allowed for drying, in case of wet sanding, before sealer is applied.

When sanding, take note of the "sandings" or sediment. Do they appear gummy or sticky? Do they readily gum up the paper? If so, you may have trouble applying a lacquer sealer. However you can change to a sealer that is thinned with alcohol and eliminate the blistering reaction.

If you still prefer a lacquer sealer to an alcohol-thinned sealer, don't pile the sealer on; use a slow-drying thinner. Shoot a fog coat first; then allow a short drying interval before shooting the final sealer coat. If you have taken all precautions and your fog sealer coat still pimples or lifts, by all means change sealers.

Allow plenty of time for sealer to dry before applying laquer coat. If you thin your lacquer with a slow-drying thinner, first shooting a fog coat, you should have no difficulty.

Don't thin your sealer too much

DO THE JOB BETTER WITH LIONOIL

WHEN you need a sealer, a rust preventive, a paint hardener or paint reducer—and want *better results* from it—use Lionoil.

Lionoil conquers rust; waterproofs; protects.

It can be brushed, dipped or sprayed and dries overnight.

Many finishers use Lionoil exclusively as a drier. Others recommend this secret-processed ingredient as a sealer or under-coat for enamel.

Others still, endorse it as a base for bronzing liquid.

The fact is that after many years of varied usage, the *full* possibilities of Lionoil remain undiscovered.

So, if *you* have a finishing problem that defies solution, try Lionoil. Or write us—today—for detailed information about its many shop uses. Just address:

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Don't thin your lacquer too much, except the last coat. Don't pile up either sealer or lacquer. Remember, fog coats are important. They don't penetrate so deeply and they shield undercoats.

I have found that by using a certain make of thinner, the hazards of applying lacquer are greatly reduced. It is so mild that it can be used to thin both lacquer and synthetic and can even be used to thin various machinery paints. I find that one of the greatest difficulties encountered with lacquer is shooting the first coat too wet, or trying to do a one-coat job.

If there is any point that I haven't made quite clear, I will gladly elaborate on this subject. —H. H. GLINKE.

Removable Coating for Spray Booths

As a result of an inquiry published in a recent issue of INDUSTRIAL FINISHING we are pleased to quote the following excerpts from a circular sent us by the manufacturer of "Kelsanite," removable protective liquid rubber coatings which "apply like paint and peel like a banana."

RUBBING IN PIANO FACTORY

This view, snapped in a piano factory, shows a workman rubbing the finished surfaces of a "lyre" pedal frame . . . . rubbing with pumice stone and water. Photo., courtesy Sherwin-Williams Co.

Kelsanite, before application, is liquid about the consistency of paint mixed for the second coat. It handles like paint in application and drying. Cream colored. Transparent when applied thinly; opaque on normal applications. Non-poisonous to breathe; non-injurious to skin. Non-inflammable. When dry, turns into pure live rubber. Dries in 20 to 60 minutes at room temperatures. Applied to hot surfaces, it dries almost instantly. Its consistency and degree of adhesion can be varied to meet your particular requirements.

Kelsanite is applicable in any industry whose products, processes or machinery call for a quickly applied, removable, completely protective coat. It is particularly recommended as an economical and quickly removable coating for the interiors of spray booths. Strips off in large sheets, retaining excess materials and leaving booth immediately ready for next operation. The manufacturer's name and address will be given upon request.—THE EDITOR.

Batch Type Ovens

An interesting and informative bulletin that describes and illustrates modern applications of batch type ovens for bake finishes is announced by the Despatch Oven Co., 622 9th St., S. E., Minneapolis, Minn. Ovens are shown in use for the production finishing of bed springs, oil burners, electric motors, electric switches, metal furniture, stoves, furnaces and air conditioners. Copies of the bulletin will be sent to concerns or individuals who are interested.

Enduring Beauty

優美耐久

Beauty that lasts under severe service conditions —this you can obtain by finishing your product with **DURAD ENAMELS.**

These enamels are beautiful when first applied and they maintain their beauty. They are resistant to marring, moisture, household chemicals, fruit juices, grease, alcohol and other destructive agencies.

They were specially developed for high-grade products subject to hard service, such as automatic heaters, air-conditioning units, refrigerators, water coolers. Supplied in all colors for high, medium, and low temperature baking, and for air-drying.

Maas and Waldstein Co. Newark, N.

Branch Offices and Warehouses . . . 1336 Washington Blvd., Chicago . . . 1228 W. Pico Blvd., Los Ang

Established 1876—Producers of Lacquers and other Industrial Finishing Materi

Manufacturer Increases Sales Force by Using Durad Enamels

A manufacturer recently adopted M. & W. Durad Enamels for finishing a high-grade metal product used in homes, because, he said, "The use of this finish multiplies the number of good salesmen working for me.

"A good finish is one of the best of salesmen," he explained. "It works you in the show room, and it continue work for you after the product is bo and is placed in service.

"As soon as a finish becomes marred disfigured, its usefulness is over. using a finish that stands up for a period of time, I increase the numbe customers that come to my dealers cause they have seen my products in homes of friends."—Adv.

What's New...

Cigarette-Proof Baking Lacquer

The H. V. Walker Co. of Elizabeth, N. J., claims to have developed, at their laboratories, an extraordinary non-burning lacquer that stands very rigid fire tests. Burning cigarettes laid on an ash tray, or any other metal article finished with this new lacquer, does not burn nor mar the finish.

Here is a positive non-burning finish that answers this specific requirement. It is also resistant to alcohol, perfumes and chemicals. This non-burning lacquer requires only a short baking time at low temperatures for a perfect job.

Striper Improved

The Beugler Mfg. Co., 4318 W. 2nd St., Los Angeles, Calif., manufacturers of the Beugler striper, announce several exclusive improvements which have been incorporated into their product to more effectively solve the striping problem.

Striping on the curved surfaces of molding is now facilitated by an adjustable "swivel-acting" wheel head.

Another feature is that both the striping wheel and axle are made of hardened steel, insuring long wearing surfaces and truer action.

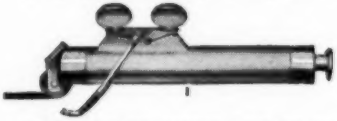
Elimination of dripping is accomplished with an improved design whereby the natural movement of the striping wheel causes all surplus material to be automatically drawn back into the barrel and remixed, even when the striper is used in difficult positions.

An additional exclusive feature is that the wheel head is provided with an extension for striping with straightedge or templet, if desired, instead of with the adjustable guides.

In the Beugler striper the manufacturer does not depend on gravity or pressure. The striping material is held in contact with the wheel by a movable plunger, thus permitting striping in all positions.

This tool is designed for easy cleaning; requires only one minute for a complete change of color. It is made to operate with any standard striping material.

Wheels are furnished for making all width stripes from 1/64 to ¼-in. An assortment of adjustable guides



makes possible perfect striping for practically any type of work. While the Beugler tool incorporates many merits in design and construction it was primarily made for the unskilled striper to use, requiring only a few minutes practice, yet the skilled free-hand stripers in many cases have adopted the tool to insure faster and more accurate striping.

Quick-Dry, Chip-Proof, Air-Dry Finish

A new synthetic finish called "Hippo Oil," now being offered by the Hildreth Varnish Co., 87 N. 12th St., Brooklyn, N. Y., is claimed to have the following characteristics:

One coat equals two coats of any lacquer; covers 500 to 800-sq.ft. per gallon.

Has extreme resistance to water, solvents, acids, alcohol and oil.

Can be reduced with petroleum solvent, a special "Hippo" solvent, or with toluol or xylol.

HALLOWEEN

would be as dead as a Dodo without color

Imagine a Halloween without colorful trimmings, without ornaments, costumes, masks and gleaming candle-lighted pumpkins. Without color and all the glamour there would be no Halloween . . . It would be as dead as a Dodo!

And many commercial products would be in the same fix if it were not for color. They would be lifeless, drab, unattractive and in no position to compete with colorful competitors. . . . Perhaps your product needs the dash and sparkle of brilliant colors . . . or it may need a modest richness that will reflect quality and charm. Whatever is needed, the artists and finishing experts of our creative studio will provide, if you will write us about your problems. . . . There is no charge to reputable firms for this service.

ROCKFORD VARNISH COMPANY

ROCKFORD, ILLINOIS

Sets within three minutes.

Available in clear and colors, and in gloss, semi-gloss and flat luster.

Can be sprayed, dipped or spread with rollers.

The coating is tough, flexible, chip-proof, mar resistant and does not become brittle.

Will not blush; unaffected by weather. Resistant to skinning, jelling and seeding.

Offers maximum adhesion to woods, metals, glass, stone, fabric and composition materials.

High Resistance to Spots and Tarnish

"Cadmium Water-Dip Lacquer No. 3850" is described in a product summary recently prepared by the Roxalin Flexible Lacquer Co., Inc., of Elizabeth, N. J. The summary reveals the properties of this clear, cellulose type, air-drying lacquer which prevents the oxidation, fuming or marring of cadmium plate.

Portable Grinder

The Mall Tool Co., Chicago, Ill., has recently introduced a new portable grinder for heavy industrial applications. This electric grinder operates at high speeds and provides fast cutting action. It is equipped with a geared head to deliver any one of the following speeds: 4500, 5500 or 7000-r.p.m., and can be furnished with angle or straight spindles for all types of grinding, sanding or polishing.

Low round steel bases, as illustrated, or high or low caster base mountings for every requirement, can be furnished. Detailed information on this and other grinders will be supplied by the manufacturer.

An electric-driven flexible-shaft grinder suitable for a variety of work

Luminescent Paint

"Dialux" is a new luminescent paint, the principal element of which is sulphur of calcium, a phosphorescent salt.

Sulphur of calcium has this peculiar quality: After having been exposed to natural or artificial light, even for a very short space of time, it gives off, in the dark, a luminosity which lasts for 12 hours. The glow is brilliant during the first 10 to 15 minutes following the exposure to light, then gradually it fades away. Dialux paint is permanent. The luminscence of painted articles can be restored time and again by simply repeating the exposure to light. In other words, the sulphur of calcium acts as an accumulator of light. Like every accumulator, after 12 hours the sulphur of calcium can be considered as discharged, but on being reexposed to light for a few seconds (20 to 30) it will recharge.

"Dialux" does not contain any radio-active matter; is not inflammable, nor toxic.

It can be applied on everything and everywhere, on metal, glass, cloth, paper, wood, hard rubber compositions. "Dialux" is made in two varieties: 1) for brush application (resin carrier); 2) for air-gun spray application (enamel carrier). Both varieties dry quickly, and are of very high mechanical resistance. Is not destructive but protective.

Covering capacity is 20 to 30-sq.ft. per pound.

The chief value of "Dialux" consists in indicating the position of objects in complete darkness. It can

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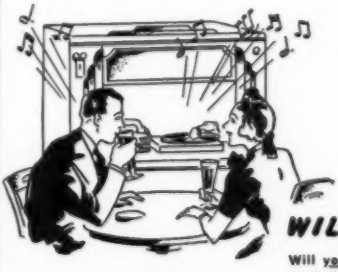
Every day some new problem of sealing, sticking or silencing is solved by DUM DUM. You'll find a DUM DUM to meet every industrial production requirement. But be sure you get genuine DUM DUM.

ONLY ARCO MAKES DUM DUM

CLIPPERS—DUM DUM glazes the windows and cements the sound absorbing pads, to shut out the elements and the roar of motors.

TO MARKET—Odorless DUM DUM sets and seals the cabinet glass in modern food stores.

ADDING MACHINES—The protective felt pads on the bottom of your office machines *stick* on and *stay* on with DUM DUM.



5c A TUNE—DUM DUM cements the grill cloth on the loud speaker of the automatic record players you see in refreshment parlors.

WILL IT BE YOURS?

Will *your* problem—(of caiking, sealing, glazing, deadening or cementing)—be the next to be solved by DUM DUM? Write us your requirements. Our laboratory will be glad to help.

THE ARCO COMPANY
CLEVELAND-LOS ANGELES

LACQUERS • ENAMELS • SYNTHETICS

be used to advantage for many purposes.

It is a product of the Grobet File Corporation of America, 3 Park Pl., New York, N. Y.

Speed-Bloc Portable Sander

The Sterling Products Co., 2457 Woodward Ave., Detroit, Mich., announces that an entirely new pneumatic Sterling Speed-Bloc sander has been designed and developed to meet the exacting requirements of the furniture, cabinet and general woodworking industries.

During the past few years the company's previous model has been acclaimed by over 40 different industries including many of the world's leading furniture plants. The machine has eliminated the tiresome drudgery of hand operation in the sanding and rubbing room, with substantial labor savings and increased production . . . . and has enabled workmen to produce a more uniform finished product without ridges, ripples or chasing.

The principle of "floating," as applied to construction of the block and pad, is an exclusive feature and provides flexibility for sanding and rubbing of curved and flat surfaces. Special pads, varying in flexibility have been developed to meet the special requirements of this class of work. The machine is of patented design and is built to the closest tolerances practiced in the machine tool industry. Specifications as to quality of material and workmanship, together with complete interchangeability of maintenance parts, provide for long service with a minimum of maintenance and operating costs. The machine operates efficiently on 45 to 60-lbs. air pressure, using approximately 5 to 6-cu.ft. of air per minute under load.

In the new model the air motor is manufactured of cast aluminum instead of cast iron, which has reduced the weight of the machine about 25%. Pistons are given an "anodic" treatment and expanders are used on piston cups. A hardened steel sleeve is pressed into the cylinder wall and provides for indefinite life of the air motor block and is easily replaced to compensate for ultimate wear. Cam, flywheel and connecting rod are supported on double-shielded ball bearings, and all moving parts are manufactured of alloy steel, hardened and ground.

For wet sanding, a water connection is provided for attaching water hose with outlets on each side of the sander, thereby directing a fine spray of water to the surface being sanded.

From one to five sheets of abrasives may be attached to the pad at one loading. Ordinary size sheets are cut into three pieces without waste, each 3 2/3 x 9-in.

Users report that the Sterling is efficient for the heaviest duty but light and flexible enough for the smallest job, replacing hand operation in sanding undercoats, wet or dry, rubbing with abrasive paper or compounds, and that the machine does a remarkable job of feather edging spot work.

Molten Metal Sprayer Improved

The Metal Coatings Co. of America, Philadelphia, Pa., announces their improved "MetaLayeR" tool which sprays molten metal—"depositing approximately 100% more metal during a given time with approximately one-third less consumption of oxygen and acetylene per weight of metal deposited in larger size wires."

According to the company literature: "The best practice employed in the oxyacetylene industry for efficient mixing and safe handling of the oxygen and acetylene have been incorporated in the mixing device in this tool, assuring safe operation with an ample supply of oxygen and

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JAMES B. DAY & CO.

● CHICAGO ●

acetylene available at a pressure below 15-lbs. per square inch, in accordance with the Underwriters Rulings. Notwithstanding the increased rate of wire melted and atomized, the final deposit approximates a fine grain obtained with tools of smaller capacity."

Chemical Resistant Finishes

A product summary giving the properties of "Blue Knight Roxyn C" has been prepared for distribution to the trade by the Roxalin Flexible Lacquer Co., Inc., of Elizabeth, N. J. This finishing material is a synthetic type, air-drying or baking flexible lacquer, pigmented and clear, with resistance to perspiration and corrosive chemicals. It has remarkable flexibility and adhesion, and withstands hard physical abuse without chipping, flaking or peeling.

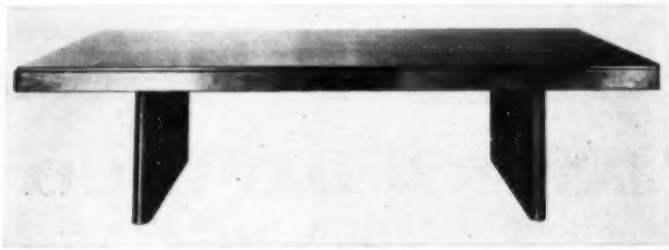
Elevated by Valentine & Co.

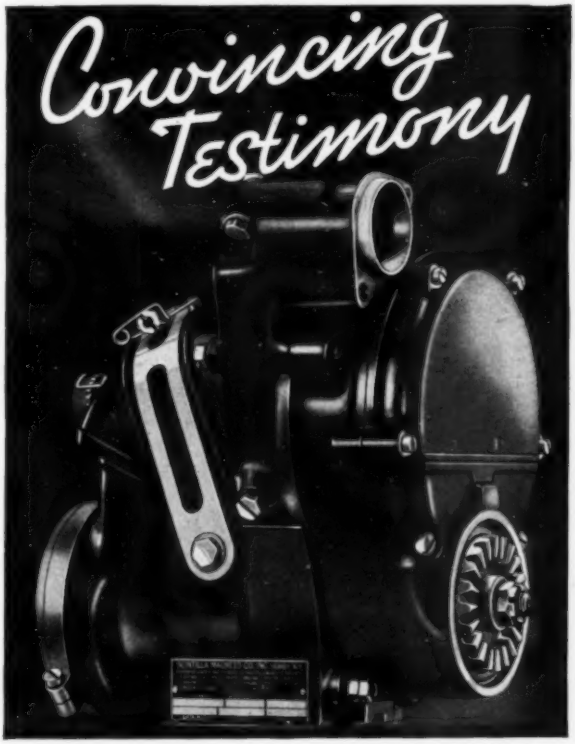
Mr. Arthur L. Clark has been appointed manager of the Aeronautical Division by Valentine & Co. of New York, N. Y. Mr. Clark has had long experience in the technical and manufacturing end of the aviation industry. Valentine & Co. manufactures a full line of aviation materials both in this country and abroad.

Directors' Table

THE enduring beauty of wood is ably attested in a rather striking office and directors' table of laminated construction, designed for the Mutschler Brothers Co. of Nappanee, Ind., by Onnie Mankki of Designers for Industry, Inc., Cleveland, Ohio, a devotee of the art of imparting utility and beauty in wood products. The new table (illustrated here) serves as an introductory number in Mutschler Brothers Co's. new Sampson office and directors' table line.

In designing the table, designer Mankki avoided clever, startling and complicated forms, aiming to bring out the full charm and beauty of wood and impart a masculine air to the table through a careful application of proportion, scale and contour. The table is available in 6, 8, 10, 12 and 14-ft. lengths, in plain striped walnut with center-matched plywood, mahogany finish, or the gun-metal shade selected by the designer to impart a definitely masculine yet restful touch. Though sturdy as "Old Ironsides" the table will harmonize with any interior in which it may be placed regardless of architectural treatment.





The wide acceptance which Scintilla Aircraft Magnetos enjoy as standard ignition for commercial planes, sport planes, and planes of the U. S. Army and Navy is convincing proof of their superiority. The fact S-W Finishes are standard on Scintilla Aircraft Magnetos is convincing testimony of their superior quality and results. S-W Primers and Surfacers, and Opex Opaque Black Enamel are the finishes. Opex Opaque Black (lacquer enamel) is an exceptionally durable jet black finish, boasting a natural high gloss, and easy rubbing and polishing qualities. For full particulars about this and other S-W "engineered" finishes, or for aid in color selection, write The Sherwin-Williams Co., Cleveland, Ohio and all principal cities. No obligation, of course.

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YOUR
STENCIL
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PROBLEMS

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in the development and production of quality finishes has resulted in many outstanding Glidden achievements. If you have industrial finishing problems, write Department D-3 now.

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Smooth Finishes for Objects in Motion

SOME PEOPLE think of finishing only as a matter of preserving the surface, but it has value also in getting a smoother surface to reduce friction on objects traveling through space. The accompanying illustration shows a car being sprayed at the Pacific Electric Co's. shops. Since the advent of newer types of fast

Spray-painting electric cars.

streamlined cars, all the transportation companies are giving more attention to the finishing of their equipment. With a smoother surface, there should be less power required and the possibility of greater speeds.

At the Douglas Airplane Co's. plant, all metal racks and many bench tops are now being sprayed with aluminum paint. This gives a more nearly perfect surface over which the delicate airplane parts may be slid with a minimum of danger from sratching. In the manufacture of airplanes for the

Government, great care must be exercised to prevent marring, hence the smooth aluminum-coated surfaces for racks and bench tops. This spray work is done in the yard so as to avoid interfering with production.

There still remains a great opportunity for developing a perfect finish for seagoing vessels, Marine organisms, which foul the bottoms of seagoing vessels will be studied intensively by the Navy Department through cooperation of Scripps Institution of Oceanography at LaJolla, Calif. W. Forest Whedon, noted zoologist, has been sent to Washington to conduct the study and seek preventive measures. The cost of a single drydocking and cleaning for an ocean liner is as high as $100,000, and this must be done twice annually. In addition, piers, piling and other port structures are damaged by fouling, which causes frequent replacement and rebuilding.—L. J. CLEARY.

Wood Filling

FILLING the surface pores of wood is an essential part of wood finishing. Really it is the foundation of a good finish. If you do not have the pores well filled, the final finish will look "hungry," as if there wasn't enough lacquer or varnish on the product. Improper filling can cause more trouble for the finisher than anything else.

I will begin with gray pores, of which there are plenty on the market today. I know that a number of manufacturers are using naphtha to reduce their filler, which is okay if you use the right kind of naphtha. I obtain best

FLOCKS

Wool - Cotton - Rayon

- In All Colors
- For All Equipment
- For Every Purpose

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BALANCED THINNER

SUNOCO SPIRITS is balanced in the essential qualities:

Uniform solvency.
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Uniform high quality.

For full information write to Advertising Dept. S-4

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facts & figures
on spray finishing

In spray finishing, ECLIPSE can save you money and time.

One user reports spraying 189 pieces per gallon with ECLIPSE, 197 pieces per hour. The next best job was 113 per gallon, 100 per hour.

Low pressure . . . dependability better finishes . . . economy . . . lightweight . . . ECLIPSE.

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Polishing Compounds
are made at
'Buffing Headquarters'
A PRODUCT FOR EVERY PROBLEM
Samples on Request
McALEER MANUFACTURING CO.
2431 Scotten Ave., Detroit, Mich.

results by using V. M. & P. naphtha—not dry cleaners'. Dry cleaners' naphtha is too dry and will affect the color in your filler. Clear gasoline is also an acceptable reducer for filler, and a little cheaper in cost.

Some finishers double fill. I do not believe in this, as you can only get so much filler in each pore. If the filler is wiped off at the proper time the pores will be filled all right. A good way to know when to wipe the filler off, is to place your finger on the surface and push; if the filler comes off clean, then it is ready to wipe.

In filling large-pore woods such as rosewood or any other wood that may have large pores, I would suggest using from 12 to 14-lbs of paste filler to one gallon of reducer; for woods that have smaller pores, use from 8 to 10-lbs. of paste to one gallon of reducer.

After putting on the filler it should be allowed to dry overnight. For quicker and better results it can be put in a drykiln and force dried, but to get good results from force drying you should have the proper relative humidity and plenty of air circulation. The r e l a t i v e humidity should be about 42% for best results.

Filler should always be rubbed crosswise of the grain, using tow or burlap. Tow is the best. After rubbing crosswise of the grain, the wood surface should be carefully wiped with the grain, using a soft rag, so as to be sure that no surplus filler remains on the surface. If any surplus filler is left on the wood it will produce a muddy appearance or grayish cast in the final finish.

Speaking of a grayish cast, you

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This product is finding wide use in the electrical goods, display signs, lamps, reflectors, novelties, toys and metal stamping industries.

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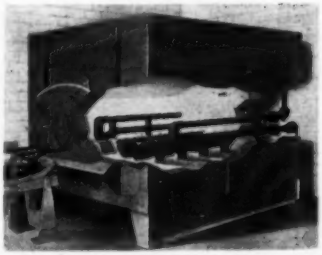
can get a gray cast by using the wrong kind of water for your water stain powder. Hard water should never be used with stain powder. Do not use chemically treated water either. Always use soft water—rain water or distilled water.—BEN. J. STUDER.

Porcelain-Enamel Furnace Heating

THE GAS-HEATED radiant or hot tube has invaded the field of porcelain enameling. Heretofore, furnaces employed for this purpose were, of necessity, of the muffle type, but with the new gas hot tube method of heating, no muffle is required as the heating up period is very short. A gas burner of novel design, and of the diffusion combustion type, has been added, and this also helps to increase the speed and efficiency with which enameling can now be accomplished.

The feature of this system of heating is a series of metal tubes located on the inside walls and bottom of the furnace, but with the ends protruding through the back wall to the outside. A gas burner fires into one end of each tube and an eductor at the other



Cutaway view of gas-radiant hot-tube enameling furnace. Notice location of radiant tubes, gas burner and eductor.

SURFACERS

PORES NEED FILLING for smooth - textured attractive finishes. Presdwood, celotex, natural woods, rough metals and porous compositions need quick-drying, easy-sanding, high-bodied surfacers—in short, our CEL-U-LAK Surfacers.

These have unusually high body, coupled with low viscosity, permitting a heavy application by spray; air dry to sand in 1½ hours, force dry at 125° for 20 minutes. They are ground finely and have phenomenal adhesion and resistance to moisture.

CEL-U-LAK Surfacers are standard in white, ivory, dark grey and red. They have for 6 years been an outstanding successful item in our line. We suggest you examine it for your requirements.

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CHEAPER . . . . .

The "Speedip"

WHIRL ENAMELER

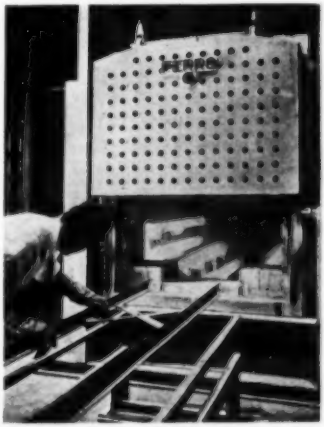
for enameling and lacquering small parts

Finishing of small parts now simplified . . . costs reduced . . . surface coating improved! The "Speedip" is just the machine needed in every plant that coats small items. Send us samples to be finished in this machine . . . we'll show you a better finish at considerably lower cost. It's "cheaper" to finish the "Speedip" way.

RONCI MACHINE CO.
45 River Avenue, Providence, R. I.

end draws the hot products of combustion through. When in operation these tubes become vary hot and radiate the heat to the work in the furnace.

One of the advantages of this furnace is that it can be shut down with every assurance of a quick heat-up when lighted again. One of these new gas radiant tube furnaces has recently been built at the plant of the Ferro Enamel Corp., Cleveland, Ohio. This furnace is of the batch type and is 3x6-ft. It is equipped with four U-shaped gas-radiant tubes laid horizontally, two on the sides



Looking inside a gas-radiant hot-tube enameling furnace. Note the hot tubes at the sides and bottom of the furnace.

and two in the bottom. These are 4-in. tubes with a ⅜-in. wall thickness and are of nickel chrome alloy (35-12), centrifugally cast.

A newly designed gas burner of the diffusion type is used with these tubes. It consists of two

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burners, set in tandem, the first acting as a pilot and the second as the main burner. The pilot has two venturi throats and space for the inspiration of primary air. A gas nozzle sits just back of the pilot burner which fires into and through the main burner. Surrounding the second venturi is a chamber through which the gas flows and is preheated on its way to the four burner nozzles. The pilot burner and the four gas nozzles which start from this chamber protrude into the end of the alloy radiant tube and the remainder of the air for combustion is drawn in at this point through the action of the eductor at the other end of the tube.

The gas pressure ranges from 3 to 4-oz., while the air pressure in the eductor is 16-oz. Automatic temperature control is provided in the form of a single potentiometer, thermocouple and motor for all four gas burners. The motor operates on and off valves in the air and gas supply lines which are brought close together, at this point, for this purpose. The pilot lights operate constantly except during periods of suspension of production.—J. B. NEALY.

Packing to Avoid Damage to Finish

INSTANCES often arise in which finishes that have been applied with all care, and upon which an excellent job has been done, are damaged by rubbing against the inside of a packing crate or box. In most cases a little study will enable one to predetermine what areas on the finished articles such chafing is liable

"MAGIC" TACK RAGS
IMPROVE YOUR FINISH 100%

MAGIC TACK RAGS remove specks, lint and sand particles—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust-proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

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6. And have the lowest unit cost of any pigment stains on the market.

Request no charge sample (½ gal.) and complete information.

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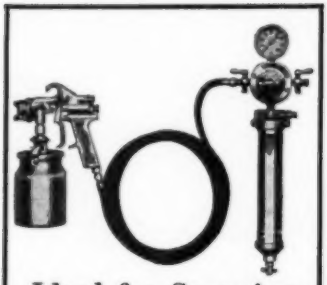

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Here is a complete commercial spray gun outfit for finishing products requiring lacquer or other fast drying materials. Baffle plane nozzle construction saves air, prevents clogging, increases atomization and vastly improves the pattern. Five nozzle sizes. Write today for literature and prices.

SAYLOR - BEALL MANUFACTURING CO.
1504 E. Philadelphia Ave., Detroit, Mich.

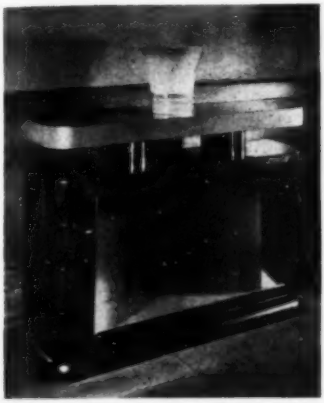
to occur, so it is a matter of good business to see that those points are protected.

A wad of cotton packing carefully interposed and fastened between the crate and finished surface will usually afford suitable protection. The means of fastening such a wad of material, however, is not always readily apparent. One practical method that evidently has not occurred to many—and one which will allow of fastening a wad of waste or other soft material quite securely, yet without the use of hard fasteners of any kind—is to simply wrap it to one member of the crate, using masking tape for the purpose. Firmly pressed into place with the thumb or finger, this material will hold securely during handling and shipment. There are many places where it can be used to advantage. It allows no slippage while in service, yet it is very easy to remove when desired.—H. E. J.

Reception Room Furniture

The accompanying illustration shows a new idea in walnut office and reception room furniture, in modern style, that serves the three-fold function of being a smart display case for small products, a magazine holder, and a source of indirect illumination. The natural walnut finish in the body of the cabinet and the modern tone are enhanced by the red lacquer finish of the display compartment and the slab that surmounts the cabinet.

A group of Mazda lamps concealed in correctly formed mat white reflectors in each corner of



Striking in appearance, but useful.

the display section casts a uniformly diffused light on products displayed. This section is protected by movable glass front. Indirect illumination is furnished by the light urn on the slab cap. The urn was designed and produced by Lawrence Blazey, designer and ceramist, and the cabinet was designed by Onnie Mankki, both of Designers for Industry, Inc., Cleveland, in whose model shop the cabinet was built.

The urge to buy is stimulated by products of well balanced design and an attractive finish.

Porcelain Enameled Iron Fireplace Fronts

Porcelain enameled iron, long used in the manufacture of kitchen appliances and more recently for the exteriors of business buildings is making a strong bid for a place in residential construction.

A black and white porcelain enameled fireplace has been designed by the Porcelain Metals Corp. of Louisville, Ky. The porcelain is on Armco ingot iron sheets, manufactured by The American Rolling Mill Co., Middletown, Ohio. The color combination presents a striking contrast.

Lugs are spot welded on the backs of the porcelain enameled sections. Reinforcement wires are fastened to the lugs. Parts of the channels are filled with cement, but the wires are permitted to extend beyond the surface.

When fresh cement is poured on the hearth and facing of the fireplace, the sections are set and braced for 24 hours. The wires become embedded in the concrete and hold the enameled fireplace sections in position.

Sands Anything

QUICKER—BETTER THAN BY HAND

One firm, using the "Dual-Blok" Portable Electric Sander, sands sealer on 600 radio cabinets compared to 200 by hand. Ask for particulars.

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Indianapolis, Ind.

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EDITORIAL

Standardized Furniture Finishes and Designs

A furniture stylist, writing in reply to our request for some suitable ideas to be used as editorials, submits the following:

I believe some constructive editorial material can be written on Standardizing Finishes and Designs. This is especially true in the maple field and in kitchen furniture.

For example, a maple manufacturer brings out a line in January with certain designs and a new finish, particular to his line. The buyer fills his requirements and in turn makes his consumer sales. The consumer, for the most part, buys one or two pieces at a time. It is a rare customer who places an order for a complete room; rather she begins with a chair and a table, or a davenport, and plans to continue to add over a period of a year, or two, or five, as the case may be.

The following market, in the eternal search for something new, the manufacturer d e c i d e s to change the finish a bit; adds a little more yellow, or more red, and the new pieces are brought out in the new finish. As a result, six months or a year later, when the consumer tries to match up her maple—and in my opinion, the maple must match—she is out of luck. Two or three different finishes on maple in the same room just won't do for the average woman, and as a result there is dissatisfaction all along the line.

What is the answer? A manufacturer should work with a finish until he has perfected it, and when that has been accomplished, he should stick to it and capitalize on it by stating: "Here is a finish upon which you may depend. Six months or a year from today you can get the same finish."

But what about something new? The answer to that is: Certainly, bring out something new, but, when it is brought out, bring it as an addition to the other grouping—as an entirely new grouping. Don't discontinue the old finish; rather discard old numbers and bring out new numbers in the old finish. Then have a second, different grouping in another finish, if

you must have a new finish each season.

The same applies to kitchen ensembles. Each year the styles are changed—or new handles are put on the old models, in new holes that won't fit the old handles, or a different finish is used. Consequently, if a woman has purchased a kitchen cabinet and comes back six months later for a utility cabinet, she can't get it. Either a special order has to go through, which in many cases can't be filled, or she has to be satisfied with a mixed ensemble.

Do you see what I am driving at? I think you could do some fine constructive work along these lines. Manufacturers are defeating their own purpose, and the sooner they awaken to the idea of standard finishes, the better it will be for the industry.

Make Safety As Interesting and Valuable as Pay Day

Wherever men work there are possibilities for someone being injured; and whenever a man is injured at work, there is always more or less a tendency to blame the company by whom he is employed. While safety is really a matter for both company and employes, it is the company that must take the lead in safety work and safety activities.

The company's first obligation is to make the plant or department reasonably safe insofar as the building, equipment and manufacturing operations are concerned. But some sources of danger, under certain conditions, can only be discovered or appreciated by the employes themselves. There should be a way of getting this information to the management; and there should be a way of instructing and reminding workmen about safety to themselves and their fellow workers. It is not a job that can be done once and then forgotten. Safety work must be continuous. Even in the smallest departments or plants there should be safety meetings once a week or at least twice a month.

If a regular safety man isn't employed, it should be up to the foreman or superintendent or some other qualified individual to see that the employes assemble at these meetings, and then appear before them to give an interesting and informative talk on safety, reminding workmen of various sources of danger and instructing them where necessary about safe procedure in various shop activities. The regular safety talk can be followed by calls upon others for suggestions. A round table discussion on safety will be the means of uncovering many worthwhile ideas, some of them dealing with production and various possible shop economies.

The investment of half an hour or an hour of company time every week or twice a month will eventually prove to be of real value to all concerned, and it should be as much a part of the regular shop routine as pay day.

A "Dress-up" Finish for Products Is Necessary

Even on products that are purchased solely for utility purposes, the finish is an important factor —and this applies in low priced items, too. Places where the finish is off color, chipped, or lacking in luster or uniformity are

considered by prospective buyers as slight defects and this sets up buying resistance. Furthermore, if the buyer learns that the finish isn't reasonably durable in service, he doesn't want the article if there is available any competitive product that has a better finish.

As **better** finished products come into all markets this tendency among buyers to demand an unblemished durable finish becomes more apparent. Evidence of it appears wherever purchases are made. To meet such demands successful manufacturers are "going all the way" to put on finishes that can't be criticized. This calls for quality materials and quality workmanship plus all the production facilities needed to do the **work** economically — cleanliness and thoroughness in all manufacturing operations, uptodate equipment, good light and comfortable working conditions. Close attention to details is imperative all along the line.

How and Why China War May Affect Our Finishing

Editor's Note: The following important and timely letter from one of our correspondents reveals significant facts about China wood oil, which is used in so many modern synthetic finishes:

During the past 25 years, methods of finishing industrial products and the materials available to the industry have taken great strides in a forward direction. Much of the progress made has been due to pressure from the automotive industry requiring rapid-finishing methods to prevent a backlog in mass production.

The quick-drying pyroxylin lacquer, appearing in the early 1920's, was a boon to the automobile manufacturer. This finish, radical in that day, also had its measure of contribution in the revolutionizing of finishing methods, and it offered advantages incapable of being realized in finishes in vogue at the time.

Following the early path of progress made by pyroxylin, synthetics brought out certain other advantages, but did not substantially change the method of spray application universally adapted for lacquer. The last two years have brought with them further features of progress in numerous combinations of lacquer-synthetics.

True enough, the "synthetic"—to distinguish it from its predecessor "orthodox" or strictly oleo-resinous type of finish made from common vegetable oils and natural resins—has not totally displaced its ancestor. There still is a large quantity of work finished with "orthodox" varnish and enamels. Compared with the type of orthodox finish in vogue 25 years ago, the present day orthodox must certainly be a better one, or else we must acknowledge that the science of chemistry is to no avail.

The present day orthodox varnish or enamel invariably contains China wood oil which, in addition to being an ingredient in this type of finish, is used to a lesser extent in many synthetics. "Wood" oil is so extensively used in the paint industry today that it can be classed as a critical raw material, in much the same sense that nitrate and copper are considered to be critical raw materials for the military national defense. For the benefit of the unsophisticated, China wood oil imparts to a finish film greater hardness, gloss and water resistance than could be obtained in films predominantly of linseed oil.

Singularly there seems to be but one China wood oil—and that one, coming from the interior of China, is floated down the Yangtze River for embarkation to other parts of the world. A critical point of Chinese defense and simultaneously Japanese offense, is the mouth of the Yangtze. From an offensive standpoint it offers the Japanese the most expedient method of penetration into the Chinese interior and, in recognition of this weakness in its defense, the Chinese have already blockaded it by sinking barges at its mouth, making it impossible to navigate the river.

Accepting the recent statement of the Japanese military officials that they shall continue hostilities two or more years, if necessary, the probability that consuming nations will be cut off from their supply of China wood oil no longer exists. The probability has become a reality. There are wood-oil plantations here in America but the domestic yield is neither equal in quantity, nor large and certain enough to be dependable

for at least another decade. With the certainty that the normal "Spring crop" of wood oil, due in January, will not come through, market quotations on oil have nearly doubled. Domestic supplies are limited and those who have any large quantities of it are jealously guarding it.

Facing this actuality, and necessity being the mother to invention, both the supplier and user of industrial finishes will unquestionably be put to many tests of ingenuity during the next few months to come. Suppliers will, naturally enough, turn to the possibility of substitutions for this critical ingredient. Their efforts in this direction may be handicapped because the art of finish formulation 25 years ago may be irretrievable. Similarly the finisher will turn his mind to the possibility of the most modern type of synthetic, employing none of the Oriental ingredient, and will be successful in continuing his methods without radical changes and perhaps without any increase in his costs. Some finishers will undoubtedly turn from varnish to lacquer.

In the case for both the finisher and supplier, there may be stored many causes for headaches and mistakes, but with their mutual cooperation perhaps still another method of finishing and departures in the composition of finishes, as we now know them, may again revolutionize the industry. As there is no question that suppliers will make substitutions, it behooves the finisher in this crisis to look toward some change in his present finish if it contains wood oil. Fortunately, however, he will not be left out on a limb because other finishes are available which can be adopted in spite of their having different characteristics.

The advisability of the finisher making such changes rests with the individual problem he is faced with in this crisis, but his deliberation on this point should not be drawn out too long if he is to keep step with his quick-paced competitor.

Roxalin Trail Blazer Will Be at National Metal Exposition

At the National Metal Exposition, which is scheduled to open in the Atlantic City auditorium at noon on October 18 and continue through October 22, the Roxalin Flexible Lacquer Co. Inc., Elizabeth, N. J., will exhibit their 22-ft. Trail Blazer—an automobile trailer containing 200 examples of what this company's industrial lacquers and synthetic finishes are doing and can do to protect and beautify manufactured products. The Trail Blazer will occupy space A-86. This remarkable educational exhibit of the accomplishments of modern industrial finishes should be carefully inspected by everyone who can possibly attend the National Metal Exposition.

Du Pont Co. Establishes New Plant in Iowa

A new manufacturing unit to supply the Middle-West with industrial finishes—paints, enamels and special finishes of the "Dulux" type—will be established by the du Pont Co. at Fort Madison, Iowa. The company now has no manufacturing facilities for this line of products between Chicago and the West Coast, and the increased demand for industrial finishes has called for enlarged facilities of manufacture.

The plant will be converted to its proposed new use by the company's own Engineering Department, using local labor and facilities so far as possible. It is expected that actual conversion work will be begun in a short time, as soon as the necessary surveys and design work can be completed. Present plans are for the production of industrial finishes such as are used by automobile manufacturers, railroads, farm implement

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manufacturers, etc., with employment of about 150, and prospective future expansion to include all types of finishes and employment of about 250.

Work will be pushed along as rapidly as possible and it is expected that manufacture will be started within six months.

Joins Commercial Solvents

Bruce Puffer, formerly sales manager of the Industrial Alcohol Division of the American Distilling Co., has joined the sales department of Commercial Solvents Corp., as a result of the recent transfer of the American Distilling Co's. industrial alcohol business to Commercial Solvents.

Mr. Puffer has devoted many years to the sales of industrial alcohol and is a well-known figure in this field. In 1920, because of his proven sales ability, he was selected to establish a branch office in Minneapolis for the U. S. Industrial Alcohol Co. Later on, he was made manager of this company's office in St. Louis and was afterwards transferred to Cleveland. He remained with U. S. Industrial Alcohol until 1928, when he left for Detroit to join the sales organization of the Forbes Varnish Co., Cleveland, Ohio.

When the American Coramercial Alcohol Corporation was formed in 1929, he became Assistant Sales Manager of this organization, covering the territory from Cleveland east, with headquarters in Philadelphia. In 1932, he was appointed Sales Manager of the Industrial Alcohol Division of the American Distilling Co., a subsidiary of American Commercial Alcohol, and moved to New York City. Mr. Puffer is now a resident of Philipse Manor, North Tarrytown, N. Y.

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Spray Equipment Catalog by Binks

The Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill., has just announced publication of a new complete 60-page catalog covering their whole line of spray painting and finishing equipment. Spray guns, pressure-painting outfits, spray booths, air compressors, pressure material tanks, hose and connections, respirators and masks, air and paint regulators, oil and water extractors, water-wash equipment, exhaust fans, paint-circulating systems, and all accessory spray painting and finishing equipment are fully described and priced. Copies of this valuable catalog will be sent to interested parties upon request.

Fire Losses Greatly Reduced

Educational campaigns, improved wiring insulation, better building construction and development of more efficient fire-fighting apparatus are among the major factors which, according to insurance authorities, have brought about a sharp reduction in fire losses. Statistics for the first half of 1937 show a decrease of $5,220,688 from the total of the same period a year ago, it is pointed out.

The educational campaigns which have been particularly successful include educational talks before groups of school children, attention-compelling posters and more efficient display advertising by insurance companies. But, in addition, the contributions of industrial science are considered increasingly important.

Classified Advertising

Rate: 45 cents per line per insertion—minimum $1.35

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